fueloil & oil heat

JULY
1960

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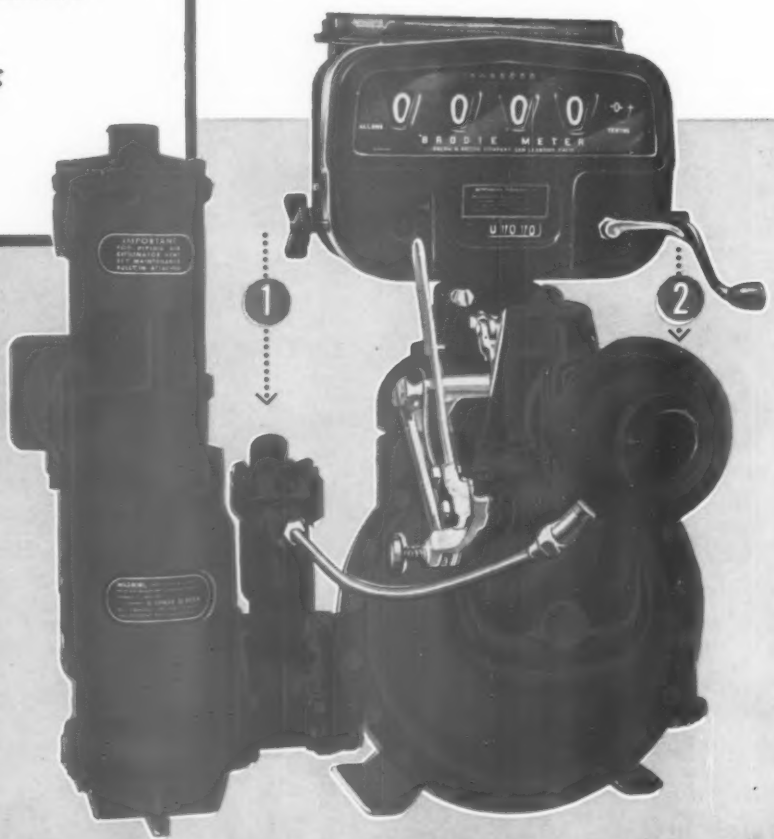

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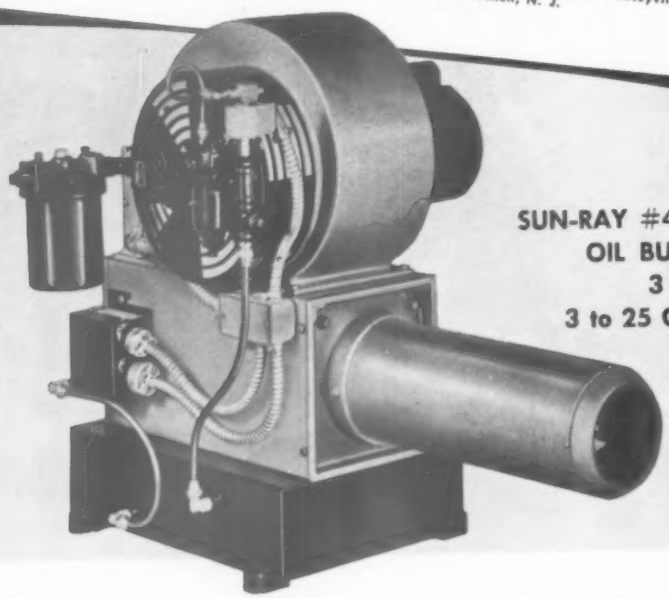

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3 to 25 G.P.H.

Get the facts. Get the Sun-Ray sales story.

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JULY fueloil & oilheat 1960

VOLUME 19 NUMBER 7

Editorial, circulation and advertising Office: 2 West 45th St., New York 36, N. Y.

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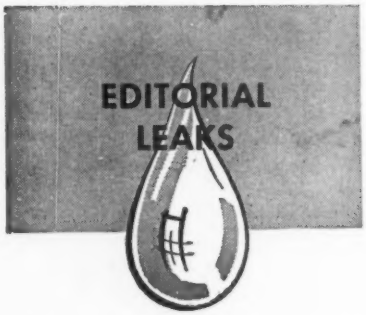
Among other things . . .

The first two features this month cover management topics of current interest to fueloil dealers. The first, on page 49, describes how Griffith-Consumers Co., Washington, D. C., realized the potential to be gained from installation of a fast delivery system—but only after a season or two to familiarize all concerned with the proper way to set it up and operate it.

Next there's a look at the routine developed at Sinkler, Inc., Southampton, Pa., to relieve the drivers of the responsibility to complete and leave invoices at customers' homes.

There's also an interesting development in fueloil-oilheating in Lansing, Mich., that's described in the article starting on page 60.

Cover photo: A few of the very fine group of oilheating symbols submitted in the National Fueloil Council competition, including the two which tied for first place. More details and more symbols can be found on page 69.



THE FUELOIL stock or inventory bugaboo seems to have been laid for the moment at least. Primary distillate levels are 5% below this time a year ago, the first negative sign in quite a spell. Now if refiners will continue to exercise a little restraint maybe we can keep the stocks realistic.

Then the price of No. 2 can go back up somewhat as it should. The Markets page this month shows 13.3¢ retail at New York, the lowest in several years. It's hard to keep refiners interested at that level, and we do need their real interest if we're going to keep today's good margins and keep their help on promoting the product.

A lot of folks were blaming the warm winter for last season's surplus, and it was certainly a factor, but at least as important was the growing competition from other automatic fuels that too many refiners had overlooked in setting their sights. The present stock adjustment is mostly due to backing away from heating oil as the prices fell. A three-quarter cent higher Gulf Coast price would put us on safer ground all round.

AND SPEAKING of promoting the product, the cooperative advertising programs sponsored and assisted by the National Fueloil Council are coming up to their advance billings. The combined first and second quarter approvals by the supporting refiners were three-quarters of a million dollars, which means that the dealers in the campaigns raised their share first in the same amount. So at this stage everything points to the $3 million year as expected.

There are now 70 campaigns ranging in size from $3,000 to over $400,000. Among the new ones just approved the largest is for Chicago which is starting with $200,000.

There remains a problem of getting more refiners to support the Midwest campaigns. On the East Coast refiners representing 77% of all gallonage are supporting members; in the Midwest the active refiners have only 48% of the market yet they support 100% of the dealer funds. This must be improved during the year and there are signs that it will be.

COMPETITIVE INDUSTRY promotion is very significant in size and scope but not always aimed specifically in our direction.

For example, the American Gas Association in its 1959 financial report shows that it spent seven and a third million dollars on national sales promotion and advertising. This includes its TV program at $2,873,000 plus all other national advertising and sales promotion of $4,433,000. Only three-quarters of a million was earmarked directly for heating. Far more was used for kitchen or other domestic appliance promotion, but the bulk of it was designed to glorify gas as a fuel *per se*.

The Association spent $1,848,000 on various kinds of research, of which $374,000 was on gasfired cooling.

Electric heating has a half million dollars to spend through Edison Institute on national advertising, but it is planning another 'spectacular' in a September issue of *Life*. There are to be 27 pages on Gold Medallion Homes with various fittings, but of course no home can have the Gold Medallion rating unless it includes electric heat.

These other-fuel promotions highlight one of their strengths that we have trouble matching. Both gas and electricity have a lot of additional uses in the home, all with higher revenues to the fuel supplier. They can afford to promote for many applications and this rubs off on heating.

Actually we as an industry and individually could afford to spend more too if we had the courage to do as they do . . . let the customer pay for it.

How much would the customer be hurt if we collected and spent two-tenths of a cent a gallon. Of course it is pretty remote, but he'd never know the difference and we would still give him fine value. That would raise $32 million, and one-tenth cent would amount to $16 million.

Who knows where we're going but if we really want this market we haven't scratched the surface for either promotion or research. Some day we may.

IN SEVERAL instances just recently we have been asked by state or local associations if we would be interested in handling our subscriptions through them on a reduced rate to their members, the idea being that they would relieve us of the detail of handling the individual transactions with the companies.

We have had to decline these good offers, with some sense of apology because the folks who asked were good friends and felt that they were doing us a favor. Actually it would be a wonderful boon to our overworked circulation department, but there's only one trouble, and it particularly affects this publication.

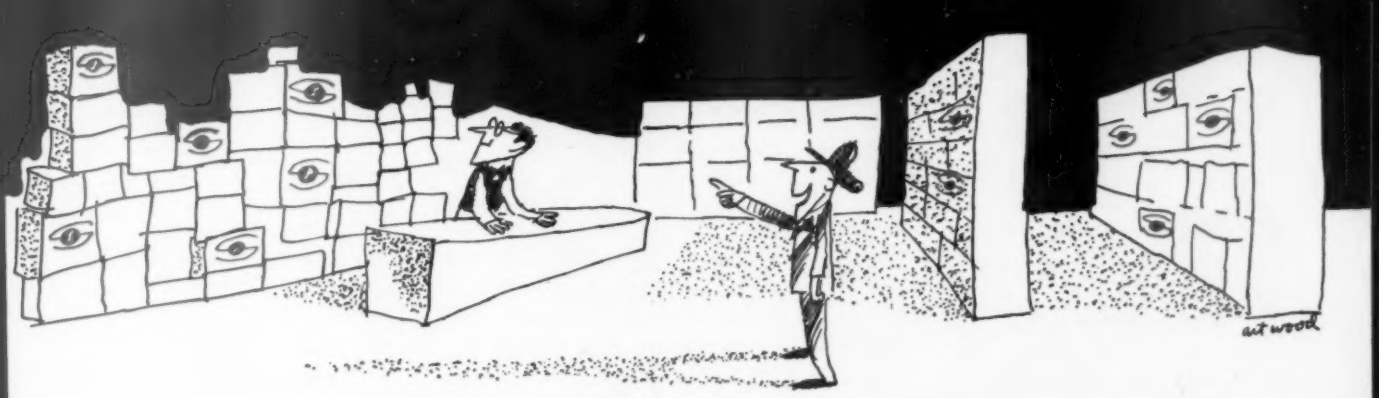
FUELOIL & OIL HEAT is the only magazine in its field that is a member of the Audit Bureau of Circulations, which means that it operates with a paid circulation.

An A.B.C. magazine may not have more than 2% of its circulation on a bulk or group basis, or the auditors simply won't count it. We have the 2% of this type in the far West, going back to the early days of the industry and never cancelled, for friendship sake, but we can't add more.

We did make a move some time ago to hold the subscription cost down. We put in a $5 rate for three years, while the annual rate is $3. Thus on the long term each issue costs the subscriber only 15¢, and the chances are it will contain some idea worth at least that much.

A SIDE REMARK (or maybe a snide remark) overheard at the OHI exposition: "A committee is a group of unready individuals tackling an unwilling assignment to do an unnecessary job."

Bob Gray



BE SURE IT'S SCULLY

Don't be misled by the claims or first costs of other available products. Whether you order a single petroleum delivery product or an entire, time-proven system, be assured that SCULLY has made it as efficient as modern engineering permits. There are no short-cuts to better value and long, trouble-free service.

For example, after years of dependable service for hundreds of petroleum distributors, the Scully UNIFIL System is still unchallenged as the fastest, most complete and most reliable tight connection method. The first company to adopt the UNIFIL System has yet to replace a single Adaptor.

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New Installations

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RESONANCE
CHAMBER
A SCULLY Feature

VENTALARM Gauge
Combination
Money-Saver

The features of the Scully VENTALARM Signal and VENTALARM Gauge, now installed in over half our oil-heated homes, have made possible safe, efficient automatic delivery. The protected resonance chamber, for instance, exclusive with SCULLY, gives complete protection of the signal, yet maintains the necessary free venting area.

The SCULLY delivery system has advantages and profits for you that are far ahead of any competitor's single product.

Investigate other component parts of the SCULLY petroleum delivery system: Type COM Nozzle, VENTAFIL Portable Fill, Vent and Signal, SCULMATIC Nozzle Control, SCULTROL Pump Pressure Control, and SCULLY Safety Vent Cap.

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GOVERNMENT INFLUENCE ON FUELS

by James M. Collins

WASHINGTON—Issues, big and little—some of them affecting fuels policies importantly—are being jettisoned right and left in Congress as it heads into its stretch drive just before adjournment until 1961.

But, all these issues will be around, awaiting action next year, no matter what the political complexion is at that time in the White House and in Congress.

Coal men still have not given up their determined battle to push through Congress a resolution that would set up a joint Senate-House committee to study the "need" for a "national fuels policy" and to make recommendations for new laws or otherwise dealing with, particularly, oil imports and interstate gas pipelines sales.

Big blow to coal came when the committee on rules in the House split six-to-six, thus rejecting, clearance for a new and toned-down fuels resolution (House Con. Res. 661) by Chairman Aspinall (D., Colo.) of the House Interior Committee. The tie vote tabled the resolution, and even a reconsideration of this vote seemed doomed to failure. In the Senate, the counterpart rules committee there has been marking time, awaiting views of sponsors of the same type of resolution, regarding a stripped down version which eliminates a reference to "optimal use" of fuels—in effect "end use control." But, there can be no joint committee set up unless both the Senate and House approve it.

But, two ancillary effects of coal's battle for their tailored resolution are expected to forge to the forefront before Congress reconvenes next January. First, Chairman Patman (D., Texas) of the joint economic subcommittee on energy, has now moved into the fuels policy picture, as has Chairman Harris (D., Arkansas) of the House Commerce Committee.

Patman Surveys Agencies

Patman has sent a letter to a number of federal and state agencies, seeking a complete rundown on the energy laws and policies which they administer, before he decides whether to hold a series of detailed public hearings later this year, or in 1961.

The Texan asked each agency head to describe the statutory basis of the agency's relationship to energy resources; a brief survey of the history of that relationship; summary of rules, policy declarations and directives issued; a statement indicating where the program impinges on or meshes with those of other agencies; unresolved conflicts; comments on the more challenging problems; and recommendations for action.

Harris May Probe, Too

Harris, on the other hand, very strongly opposed the coal men's special resolution for a joint committee on fuels policy at the House rules hearing. He argued that his commerce committee has the staff, the experience and the jurisdiction, and he pointed out that no coal men have been to see him about an investigation, indicating very strongly that he would not oppose the idea—if his committee did the job.

Residual Imports Are Cut

Meanwhile, the coal industry has won an important battle over residual fuel oil imports. In setting quotas for the third quarter of this year, the Administration slashed the first-half level from 495,000 barrels daily (virtually all of it moving in to the East Coast) to 250,000 B/D for the July-September period, a slash of nearly 50%. Interior Department, trying to justify this cutback, pointed out that the third quarter level was about equal to actual residual imports during the third quarter of 1957—the base period. However, industry men freely predict that stocks will fall to very low levels and supplies and prices will strengthen very appreciably for residual next winter—if the government does not increase imports of residual substantially during the fourth quarter of this year. Coal men, however, are counting on continued pressure to hold down residual imports, when time comes to set fourth quarter quotas. The whole development has a political odor.

No Cut Seen in Crude Imports

On the other hand, oil producers have not had any luck, so far, in persuading the Administration to reduce the level of crude oil imports, East of the Rockies. The last-half level is 698,000 B/D—only about 25,000 B/D less than during the first half of this year.

There is no indication that officials will further reduce the crude import level. They point out that some slight cuts may be made—after a review is finished of the Bureau of Mines forecasting methods (in computing demand). These officials fear that the Bureau's estimates may have been a little high in the past. But, any adjustments which are made will be small, and will not significantly affect crude imports. On the other hand, officials say that even if crude imports were reduced by 25% to 50%, the extra 175,000 B/D to 350,000 B/D would mean very little to the individual producers, well, or royalty owner, by the time it were divided up among all of them.

These administration officials continue to argue that it is not imports, but other factors—such as excessive refinery runs, oil-gas competition in the market place, uneven conservation practices in the states, etc.—which are having a greater effect on the health of the domestic industry, than do imports.

Attack on Depletion Is Planned

The attack on the oil-gas tax depletion allowance (permitting a producer to deduct up to 27.5% of his gross income before computing income taxes) has failed again, but it has rolled up a bigger vote. This issue will be around again next year and some of the bitterest depletion opponents are getting set to make another try then.

"The Yellow Pages help us get new families that move into our area"

says A. L. Kent, Sr., Owner, Home Fuel Oil Co., East Orange, New Jersey

"We've found from experience that many new families moving into our area just naturally turn to the Yellow Pages when they want fuel oil. Also, folks who are planning to convert from some other fuel invariably consult the Yellow Pages. Another part of our new-business team along with the Yellow Pages is our fleet of 11 freshly-painted trucks and uniformed drivers.

"The bulk of our business is residential. That's why we use the Newark, Montclair, Orange, Summit and Elizabeth directories to reach the home owners in our entire marketing area. We know we couldn't afford to be without Yellow Pages advertising!"

You, too, will find that Yellow Pages advertising builds business for your products and services. Let the Yellow Pages representative at your Bell telephone business office help you plan an advertising program that will make residential and commercial fuel oil users aware of *your* name and location. Call him *today!*

BUSINESS BUILDER! This display ad (reduced) and other messages in five directories keep the Home Fuel Oil name before home owners at all times.

Find Us Fast in The Yellow Pages

Display this sales-building emblem wherever your prospects can see it. The Yellow Pages representative will gladly supply as many as you need.

Meet Mr. Gabe Marin of Jamaica, New York—

Winner of Honeywell's big WIN-A-WAGON Contest!

Mr. Marin came closest to estimating the exact number of cycles completed by the new Honeywell R478 Programming Relay under rugged torture-testing. The correct number was 243,810—equivalent to over 16 years of normal operation!

Mr. Marin and his family are looking forward to many hours of motoring pleasure in the "Merry Olds"—America's most unique innovation in motor car travel in half a century!

Mr. Marin of the Sun-Ray Burner Manufacturing Company, says: "I've had a great deal of experience with Honeywell Flame Safeguards and I'm convinced they're *built to last!* So, I took this into consideration when making my 'guesstimate'—and I'm mighty glad I did!"

We're also pleased that Mr. Marin won the unique 1901 Olds —and we're happy to announce that the following men won deluxe Heiland Pentax 35 mm. Cameras for submitting the ten next-closest estimates:

Mr. Neale F. Laurence
Van Zelm, Heywood and Shadford
West Hartford, Conn.

Mr. George H. Dunbar
A. R. Newcombe Co., Inc.
Kingston, N. Y.

Mr. S. Nassau
Fulton, Delamotte, Larson
Nassau and Assoc.
Cleveland, Ohio

Mr. Glen Kightlinger
Fuel Equipment Co.
Pittsburgh, Pa.

Mr. Richard V. Norris
Iron Fireman Manufacturing Co.
Cleveland, Ohio

Mr. Daniel E. Wright
Mechanical Engineer
Omaha, Nebr.

Mr. Ronald M. Luzi
Van Zelm, Heywood and Shadford
West Hartford, Conn.

Mr. Marvin Sabey
Vapor Heating Corp.
Niles, Ill.

Mr. William C. Arndt
Weil McLain Co.
Michigan City, Ind.

Mr. John K. Zimmerer
Van Zelm, Heywood and Shadford
West Hartford, Conn.

Our sincerest thanks to all those who entered the WIN-A-WAGON Contest! Remember, you may not have won a prize, but you'll always be a winner when you use the new R478 Programming Relay—it's built to last . . . and last . . . and last!

**Trademark*

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Meet another Winner—Honeywell's new R478 Programming Relay

- **Four rugged silicon diodes** replace rectifiers formerly used to provide more rugged construction, reduce heat dissipation and assure long life.
- **50% fewer tubes** used than in former models—now encased in protective tube shields.
- **Simplified electronic timing**—one tube provides pre-purge, post-purge and trial for main flame ignition timings.
- **New armored back**—plus zinc-plated dichromate finish for increased resistance to corrosive industrial atmospheres.
- Fits same mounting as former model of the R478 for fast, easy replacement.

Now! Unmatched flexibility in a flame safeguard! Never before has a flame safeguard offered so many applications and performance advantages as the new Honeywell R478 Protectorelay*: electronic flame detection, unparalleled sequencing flexibility, convenient voltage flexibility, simplified electronic timing and many other features.

Honeywell

First in Control

SINCE 1885

Oilheating & Airconditioning
MERCHANDISING NEWS

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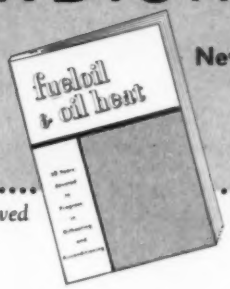

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Monthly oilheating Trends

THE MONTH of May brought our first setback this year on oilheating installations. With 41,927 jobs put in we had a 7% drop from the 45,098 in the same month last year. The reasons are not too clear, but obviously influenced by the severe decline in new home building which was reported off by 21% in the first quarter.

The May installations were divided: New homes, 9,595; replacements of old oilheating 18,000; conversions from other fuels, 14,332. For the complete five months the estimated total was 209,618 against last year's 204,962—thus, we are still holding a gain of 2% on installations.

The five month total was divided: New Homes, 70,656 this year against 69,709; replacements 80,072 vs. 79,666; conversions from other fuels 58,890 thus far as against 55,587.

One favorable development in May was the upsurge in airconditioning installations with oilheating dealers putting in 5,487 central cooling jobs. They also did well on direct-fired pressure-burner water heaters at 2,339 for the month.

Perhaps, this is the year of the long anticipated break-through for airconditioning.

Oilheating Stocks: At the end of May, dealers were holding an estimated 52,716 domestic burners and units which is a modest increase from 46,560 a month earlier, but a very real drop from the 73,159 on the same date last year.

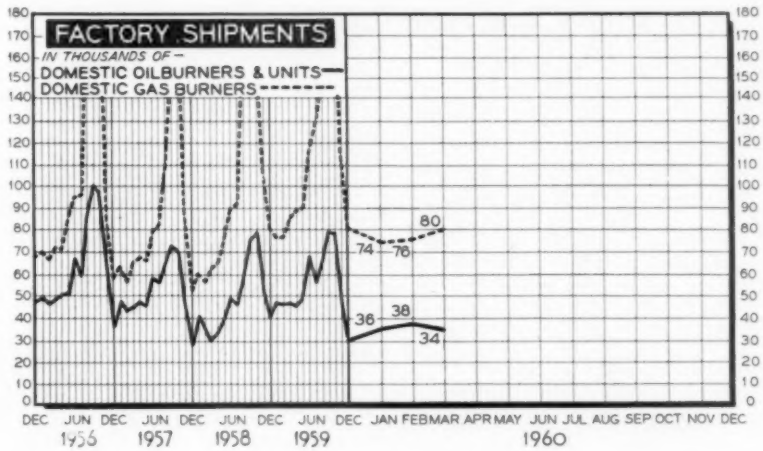
This ties in fairly well with the factory position which showed 26,000 fewer shipments in the first quarter of this year than last year, while we find installations running just about even.

The May 31 dealer stocks were divided: 25,304 separate burners; 11,598 boiler-burner units; and 15,814 furnace-burner units.

Factory stocks at the end of March, the latest available data, were 57,533 compared with 47,868 a year earlier.

Tank Stocks: These are reported primarily as an index to the dealers' attitude to inventory. At the end of May, they were holding an estimated 33,916 customer tanks compared with 42,686 a month earlier and with 33,802 on the same date in 1959.

Apparently the very considerable publicity on steel mills operating at a low capacity has caused dealers to hope for lower tank prices this summer.



May Minimum Retail Prices Key Dealers

	May Avg.	Apr. Avg.
Separate Burners	$313	$313
Boiler Burners	745	742
Furnace Burners	627	625

Price Index: Separate Burners 1947-49 is 100%

WHOLESALE			
May	94.5	Six months ago	94.5
April	94.1	Year ago	94.6
RETAIL			
May	90.8	Six months ago	91.9
April	90.9	Year ago	92.1

Shipments of Oilburners and Units
(Including Exports)

Adjusted to include manufacturers other than those reporting to Census Bureau, FUELOIL & OIL HEAT's estimates of shipments are:

	MARCH			THREE MONTHS		
	1960	1959	Percent Change	1960	1959	Percent Change
Separate Burners	23,986	30,367	—21.0	79,919	96,861	—17.5
Boiler Burners	3,797	2,752	+38.0	9,631	7,836	+22.9
Furnace Burners	6,466	10,384	—37.7	19,120	30,391	—37.1
All Domestic	34,249	43,503	—21.3	108,670	135,088	—19.6
Commercial	3,064	2,565	+19.5	8,629	7,891	+ 9.4
Total	37,313	46,068	—19.0	117,299	142,979	—18.0

How much of an industry Factor is burner preventive Maintenance?

THE OILHEATING consumer is very much in the driver's seat . . . perhaps stronger than ever before, and the fueloil distributor pays increasing attention to what he wants. The number of oil companies taking full responsibility for satisfactory oilheating through their own equipment and service departments continues to grow in each succeeding market analysis.

The better companies now realize that it is neither practical nor safe to depend upon disinterested oilheating service. First, because the charges might be high for the quality of service rendered; and second, when a replacement is needed the disinterested man often recommends another fuel.

Oil companies with service departments use a variety of programs. The type growing in popularity today includes some form of preventive maintenance. One of the problems of our industry is inherent in the fact that an oilburner will operate and keep the family warm when it may be so badly out of condition or adjustment that it is wasting a lot of oil.

Service Contracts

The more common form of preventive maintenance is the service contract which nearly always includes at least one annual cleaning and tune-up to put the unit in top efficiency each season.

Our special study this month is designed to measure the extent of this type of care and bring in some of the details.

In putting together the findings from our monthly reporting group, we are excluding this time the Pacific Northwest, partly because preventive maintenance is less popular in that area on the part of oil companies and also because the number of returns were too limited to be considered representative.

First, we find that among the reporting group 37% of their customers buy an annual service contract. The range here is from a very few to a high point of 97% in the case of one large company in suburban New York.

Just under two-thirds of these contracts include parts. Each of these conditions shows a substantial improvement over a similar, but much larger national study made in April 1959. The average price today for a contract including parts is $27 compared with $25 last year and the average contract not including parts is $18 against $17 last year.

These prices apply to oil customers and not to the general public. When we asked how much extra they charge if any for oilheating service contracts to a non-oil customer, the answers were too few to be useful because almost none of the reporting companies will put the equipment on contract unless it is an oil account. The reason is pretty obvious—the typical service department loses money, and the dealer looks on this as necessary good customer relations to the oil account.

Apart from the customers with annual service contracts another 28% buys a clean-up and adjustment job once a year, and for this is paid an average of $11. A year ago the average on this item was $12.

This particular job will also be done for a non-oil account for which the typical charge is $13. The fact that oil companies generally won't take annual contracts, but will do an annual clean up for non-oil accounts indicates this latter is a good way to get acquainted for future possibilities. Also, there are times when the men are not rushed and can do a one-shot job without disturbing the routine.

The customer that has neither contract nor annual clean-up spends just under $18 for service, but he cannot expect the high efficiency that goes with annual preventive maintenance.

Looking at it another way, the average spent by all customers for service regardless of whether they had contracts or annual clean-ups or emergency call ins was $19.44 which compares with $18.66 in the April 1959 study.

The customer with a service contract has an annual average of 3.2 hours of a serviceman's time at his house. Those without contracts averaged 2.1 hours of a man's time. This, of course, is based on a weighted average of companies reporting from all sections of the country.

Less Turnover

There is one great advantage apart from the obvious better efficiency of an oilburner. The dealers have less turnover of fueloil accounts where they have the close relationship with the customer that the contract provides, or so say better than seven-eighths of the reporting companies.

Then we find 72% of the companies saying that the average operating efficiency of a burner under a service contract is appreciably better than those of a non-contract burner.

Next we asked the group if they can break even on their service contracts. Only 47% say that they can. The other 53% lose an average of $6.31 per contract.

The final question in this series asked the dealer to estimate the percent of oilheating service that is done by oil companies. The average is 76% with New England showing 86%; Mid-Atlantic, 84%; and the Midwest 58%.

Here are a few of the comments on this subject:

"We don't generally service non-

oil accounts unless it is one of our burner installations." . . . "We do not encourage the customer to buy service contracts because we are sure they get by much cheaper with a good thorough vacuum cleaning and service job, plus paying for any service they need." . . .

"We do not offer service contracts, but most of our better customers do take advantage of our clean-up plan."

Where is the New home Market?

	No. of Permits Issued	
	March	3 Mos.
Alabama	882	2,486
Arizona	3,364	5,047
Arkansas	285	747
California	20,500	49,314
Colorado	1,285	3,243
Connecticut	1,765	3,309
Delaware	442	691
District of Columbia	307	418
Florida	5,697	18,865
Georgia	1,641	4,529
Idaho	157	248
Illinois	3,804	9,246
Indiana	932	2,349
Iowa	368	915
Kansas	609	1,274
Kentucky	402	1,224
Louisiana	963	2,603
Maine	64	125
Maryland	1,847	4,414
Massachusetts	1,216	3,792
Michigan	2,101	5,181
Minnesota	795	1,683
Mississippi	398	845
Missouri	1,131	3,219
Montana	156	254
Nebraska	268	624
Nevada	428	1,096
New Hampshire	75	214
New Jersey	2,124	5,270
New Mexico	455	1,220
New York	5,100	12,511
North Carolina	791	2,328
North Dakota	64	101
Ohio	3,291	7,806
Oklahoma	648	1,843
Oregon	612	1,732
Pennsylvania	3,491	6,564
Rhode Island	216	555
South Carolina	260	621
South Dakota	77	169
Tennessee	1,612	3,873
Texas	5,943	14,675
Utah	622	1,350
Vermont	22	33
Virginia	2,103	5,967
Washington	1,634	3,415
West Virginia	93	282
Wisconsin	1,524	2,907
Wyoming	130	298

These figures are collected by the Census Bureau from selected area. They represent approximately 77% of all dwelling construction in the United States.

. . . "Service contracts are a great help. When you put a customer on a complete service contract and also get him on a budget plan, you have tied him closely to your company. We only offer the inclusive service contract. The labor contract without parts is too strong a temptation to some dealers to try to make up a labor charge in the price of the part. The public realizes this and honest dealers are being criticized." . . .

U. S. Census of Business, 1958 has Data on Fueloil Dealers

ONE OF THE more useful sets of data prepared for our industry in recent times is in a publication covering the retail lines in the 1958 Census of Business.

A dealer in any one of many lines of business is classified in the category most important to him. A "fueloil dealer" is one whose retail fueloil business represents his largest dollar volume. Thus his characteristics do not apply to, nor include, those companies whose principal business is gasoline or coal or heating or any other but who sell fueloil as a minor part of their total sales.

So the new Census data cover just the fueloil specialist; it's the company's real interest in life. Just about half, as we shall later see, of all fueloil is sold by this specialist. Another quarter is sold direct to the consumer by major oil companies and the remaining fourth is sold by companies like the typical gasoline "jobber," whose number is large but whose individual fueloil volume is small.

The new Census report covers 10,248 fueloil dealers. Of these only 6,530 have payrolls and the other 3,718 do not. This second group includes one-man enterprises and partnerships.

The payroll group of 6,530 companies had on November 15, 1958 a total of 43,401 paid employees or about seven each not including proprietors. These employees earned an average of $78.93 in the week nearest that date.

The 6,530 fueloil dealers having employees sold in 1958 a total of $1,667,752,000 or an average of $255,398. This represents the sales volume of all products, not just fueloil.

The 3,718 fueloil dealers without employees sold $103,240,000 in that year or an average of $27,767 per dealer.

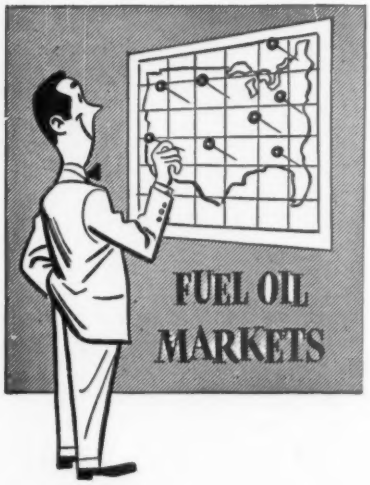
Among the larger group, which would be more representative of those companies that regularly cooperate with FUELOIL & OIL HEAT in marketing studies, fueloil in 1958 represented 73% of their total dollar billing. The other 27% was in heating equipment, service, coal, gasoline, air-conditioning and miscellaneous.

When this 73% is applied to the total dollar volume of that group as recorded by the Census, their total sales of fueloil were approximately $1,217,459,000. In that year the Bureau of Mines reported sales of No. 1, 2 and 3 heating oils at 386,317,000 bbls., and if we assume an average price of 15¢ a gallon the total market volume was $2,433,791,000.

Thus the fueloil sales of the 6,530 fueloil specialists large enough to have a payroll were just slightly over half of the market. This does not include the 3,718 non-payroll companies since they sell a fairly high percentage of kerosene.

The annual fueloil marketing analysis by FUELOIL & OIL HEAT has consistently shown that the major oil companies sell a fourth of the retail volume—in 1958 it was 24%. The balance of the total volume is sold by gasoline jobbers of which there are some 15,000 selling modest amounts of fueloil, or an average of a quarter million gallons each. The fueloil specialist with payroll, or the 6,530 companies of the Census, averaged one and a quarter million gallons sold in 1958. The fueloil dealer of the Census who had no employees, the 3,718, typically sold 185,000 gallons of product.

The Census study in another column showed that 9,105 active proprietors of unincorporated businesses were working within the total of 10,248 companies.



THE FUELOIL business is in a state of what might be called mixed emotions. The heavy consumer demand of March was wonderful to bring down primary stocks, and the table here shows that they are now running 5% below last year.

In spite of this condition which would normally be considered favorable, the prices at the big Eastern markets from New York to Charleston went off again at the middle of June. It is hard to believe that this has simply become a habit and that folks are doing it in spite of stocks, but there certainly is no other good explanation.

There's been considerable jumping around or what the airline captains would call turbulence in the Midwest as well with curious voluntary allowances even at the retail level.

At the end of the Degree-Day season or May 31, we find that the weighted seasonal average of the East was 1.6% warmer than normal; and 4% warmer than last year. The Midwest 5.5% colder than normal, and 4.4% colder than last year. The whole area East of the Rockies was 1.2% colder than normal and 1.5% warmer than last year.

Distillate Fueloils

PRIMARY STOCKS*
(Thousands of Barrels)
East of Rockies

	June 10 1960	*June 12 1959*
East Coast	37,155	39,778
Midwest	31,348	28,911
Gulf Coast	18,738	23,011
Total	87,241	91,700

*American Petroleum Institute.

No. 2 Heating Oil (Including No. 3 & PS200)

Price per gallon as of June 15, 1960

	Tank Car†	*Tank Wagon*
Portland, Me.	9.7	14.3
Boston	9.6	14.1
Providence	9.6	13.9
Hartford	9.85	13.9
New Haven	9.5	14.0
Syracuse	10.8	14.6
Albany	9.7	13.6
New York	9.2	13.3
Newark	9.2	13.2
Philadelphia	9.3	13.6
Baltimore	9.2	13.5
Wilmington, N. C.	9.8	13.4
Washington	9.8	13.8
Richmond	10.1	13.5
Charleston, S. C.	9.8	13.5
Chicago	9.0*	13.6
Detroit	10.5*	15.6
Cleveland	11.2*	15.6
Minneapolis	9.429	15.2**
St. Louis	9.35*	14.4
Indianapolis	9.89*	14.2
Milwaukee	9.235*	13.4
Des Moines	..	13.8
San Francisco	12.05*	14.8
Portland, Ore.	10.825*	15.1
Seattle	10.6*	15.2
Spokane	12.6*	16.8
Los Angeles	11.55*	14.3

Tank wagon prices shown are for maximum one-time delivery discounts.

*Delivered.

**Voluntary allowance of 1.0¢ gal. applicable.

†Tank car prices are typically those paid by fueloil distributors as a purchase price. On the West Coast, this term more often indicates a retail sale to a large commercial account. This usually is a half cent below tank wagon price.

Degree Day Table

	——SEASON TO DATE—— Sept.-May 31		
	Norm.	*'59-'60*	*Percent Change**
Albany AP	6888	6601	— 4.2
Atlanta AP	2826	3226	+14.2
Baltimore CO	4203	4236	+ 0.8
Boston AP	5742	5448	— 5.1
Buffalo AP	6720	6550	— 2.5
Charlotte, N.C. AP	3205	3507	+ 9.4
Chicago AP	6252	6361	+ 1.7
Cincinnati CO	4532	5209	+14.9
Cleveland AP	5950	6108	+ 2.7
Dallas AP	2272	2793	+22.9
Denver AP	6051	6216	+ 2.7
Des Moines AP	6384	7173	+12.4
Detroit AP	6336	6330	— 0.1
Grand Rapids AP	6396	6867	+ 7.4
Hartford AP	6094	6157	+ 1.0
Helena AP	7951	8172	+ 2.8
Houston AP	1388	1748	+25.9
Indianapolis AP	5581	6027	+ 8.0
Kansas City AP	4880	5361	+ 9.9
Los Angeles CO	1432	913	—36.2
Louisville AP	4434	4742	+ 6.9
Milwaukee AP	6944	7422	+ 6.9
Minneapolis AP	7748	8087	+ 4.4
New Orleans CO	1175	1658	+41.1
New York CO	5032	4925	— 2.1
Omaha AP	6123	6896	+12.6
Philadelphia CO	4523	4901†	+ 8.4
Pittsburgh CO	5035	5377	+ 6.8
Portland, Me. AP	7493	7046	— 6.0
Portland, Ore. CO	4046	4226	+ 4.4
Providence AP	6041	5718	— 5.3
Roanoke, Va. AP	4152	4550	+ 9.6
St. Louis AP	4688	5243	+11.8
Salt Lake City AP	5785	6147	+ 6.3
San Francisco CO	2523	2123	—15.9
Sault Ste. Marie AP	9016	8803	— 2.4
Seattle CO	4237	4214	— 0.5
Toledo AP	6322	6547	+ 3.6
Washington AP	4333	4270	— 1.5

*Compared with normal. †Airport Office.

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Why settle for less business?

MOBIL MEANS MORE CUSTOMERS!

because more people buy Mobilheat than any other brand!

Mobilheat distributors are armed with tailor-made selling and marketing plans that *work* in their particular markets.

Individual planning with each distributor quickly gets down to the hard facts of whom to sell and how. There's no fooling around with "soft" programs that look better in print than on profit and loss statements.

Selling tools that help Mobilheat distributors tell the best product and service story in the business mean more customers for *all* of them. If you are interested in how to get more customers—and are willing to benefit from experience—contact the Mobil Oil Company office nearest you.

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Two styles—2, 3, 4, 5, 7½, and 10 horsepower capacities — economical to operate — easy to service.

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Hi-Boy and Lo-Boy, Counter-Flo and Horizontal Models for all applications.

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Manufacturers of Heating and Cooling Equipment
SWARTHMORE, PENNSYLVANIA

Names in the News

B. L. Ray, a vice president and member of the board of management, Esso Standard Division, Humble Oil & Refining Co., retired June 1 ending 40 years as an Esso marketer. His first job after college was a clerical position in the Norfolk office of Esso's Virginia sales division. Six years later, he was a district manager. After several promotions in the field he became manager of the Virginia sales division and later the New Jersey sales division.

He became a director of Esso in 1952, general manager of marketing in 1954, and was elected a vice president and member of the executive committee a year later.

William R. Sinks has been named sales manager, The Nu-Way Corp. and Sundstrand Engineering Co., Rock Island, Ill. He succeeds *John W. Olson* and will supervise sales of the firm's heating equipment through sales divisions. Previously, Sinks had served as an account executive in the Midwest regional sales office of General Controls Co.

Sinks

R. Fenton Fisher, 71, vice president (sales), The Mercoid Corp., Chicago, died while aboard the S.S. President Wilson returning from Yokohama, Japan, on May 21. He had been vice president of the firm for the past 26 years. For many years he was in charge of sales for the eastern area and was located in New York City. During the past three years his activities were concentrated on the West Coast with headquarters in Santa Barbara, Calif. During his association with the oilheating industry, he served on many committees of the Oil-Heat Institute of America and was also a member of the Old Timers' Club. He is survived by his widow, two daughters, and four grandchildren.

William E. Judd, general manager heating and airconditioning division, has been elected a vice president of Stewart-Warner Corp., Chicago. He has been with the company since 1942 and was general sales manager of aircraft and automotive products, assistant to the president and in 1956 was given his present position.

Stanley J. Nelson has been named manager of residential operations, Minneapolis-Honeywell Regulator Co., Minneapolis, Minn. Also, *R. S. Fries* has become manager of commercial operations. He is succeeded as manager of Honeywell's Appliance Controls Division in Los Angeles by *Ralph L. Allen*. In turn, he is succeeded as manager of branch sales office operations by *J. E. Remington*, formerly corporate credit manager. Nelson, who had been manager of operations for the company's Minneapolis Division, now will be in charge of Honeywell facilities involved in the design and manufacture of automatic controls for the residential heating and airconditioning market. Fries has assumed over-all responsibility for the Minneapolis Panel Division and factories in Chicago and Wabash, Ind.

Nelson **Fries**

BOOST FUEL OIL DELIVERY by 10%

NEW BUCKEYE NOZZLE...SWIVEL...for low pressure-drop at high capacity

No. 125 FUEL OIL NOZZLE

Available with either 1¼" or 1½" IPT inlet — with or without tube and with or without integral check valve

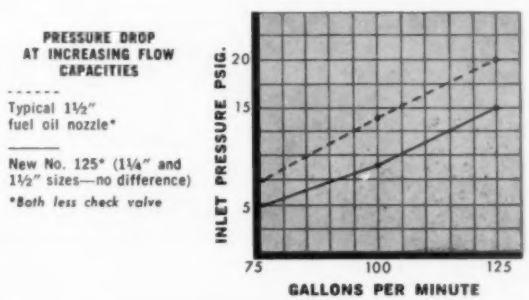
- Less than 10 lb. drop at 100 gpm.*
- Higher lift, seat diameter larger than outlet tube.
- Designed for 125 gpm flow rate.
- Easy to open, easy to close because of hydraulically balanced design. No hammer or chatter.
- 4-notch replaceable guard permits easy control.

**Tested on nozzle without internal check*

No. 126 SWIVEL. Available in 2 sizes—1¼" and 1½"

- Fully repairable: remove plug and ball bearings. Bearings and quad-ring seal easily replaced.
- Teflon and ball bearings for easy operation.
- Full pipe size opening at both ends. Female portion of swivel (hose end) is larger than hose coupling—easy to attach and detach.
- Increases hose life. Prevents kinks, twists and damaging tension. Allows hose and valve to turn independently.
- Permanent lubrication of bearings; grease-sealed at factory.

To you, time is money — and increased delivery capacity of your equipment adds to the number of stops your trucks can make per day. This new Buckeye combination is the only such system designed to give you low pressure drop at flow rates up to 125 gpm—virtually an "open pipe" system. Write for more information or contact your Buckeye distributor.



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AT A COST OF ONLY $4.00 A MONTH
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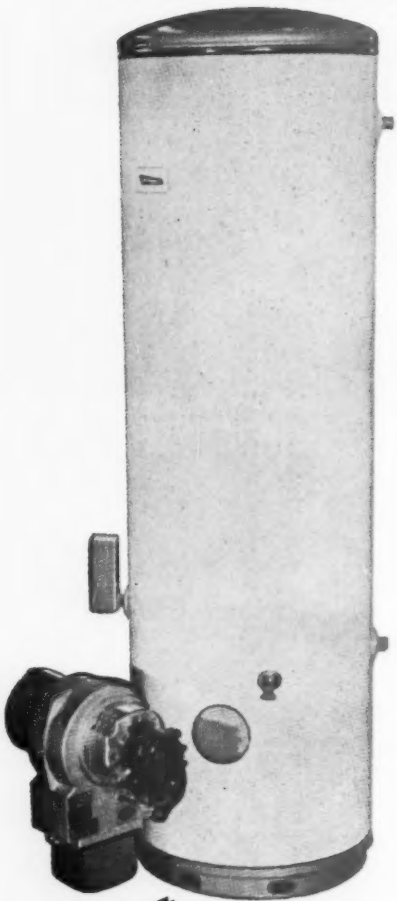
With a Gun Type Oil Burner



LOW COST
That's right, a home owner can have all the Hot Water he can use, at a cost of $4.00 a month or less. Eligible for F.H.A. terms with NO DOWN PAYMENT.

FAST RECOVERY
30 gallons of Hot Water in 15 minutes with the 30 gallon model. Quicker on larger models. That's 5 to 6 times faster than any other type Water Heater on the market.

5 TANK SIZES — TWO TYPES
A size for every use, bungalow, apartment house, restaurant, motel, etc. Either copper or glass lined tanks.

CLEAN, CLEAR HOT WATER
Glass lined and copper tanks are rust and corrosion free. You get crystal clear Hot Water. Magnesium anode assures extra long tank life.

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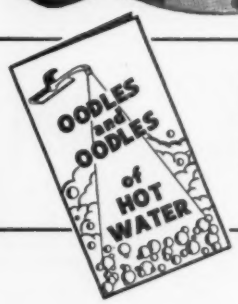

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Attractive leaflet in color, with your name, address and phone number. Ask for it on your letterhead.

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VALLEY STREAM, NEW YORK

Fred Kutch has been appointed sales manager for petroleum and industrial products, Liquid Meter Division, Neptune Meter Co., New York. He will be located at the Division's new headquarters in Long Island City, N. Y. Kutch joined Neptune in 1954 as a sales representative in New York and New Jersey.

Joseph B. Elliott has been named president and general manager, York Division, Borg-Warner Corp. He succeeds *Henry Haase* who has been transferred to the Borg-Warner central office in Chicago. Elliott was formerly president of Schick, Inc., and Tele-Dynamics, and executive vice president of RCA.

L. H. Hoelter has been made marketing manager, Permaglas Division, A. O. Smith Corp., Kankakee, Ill. He has been with the company since 1941 and served as sales manager of heating and airconditioning.

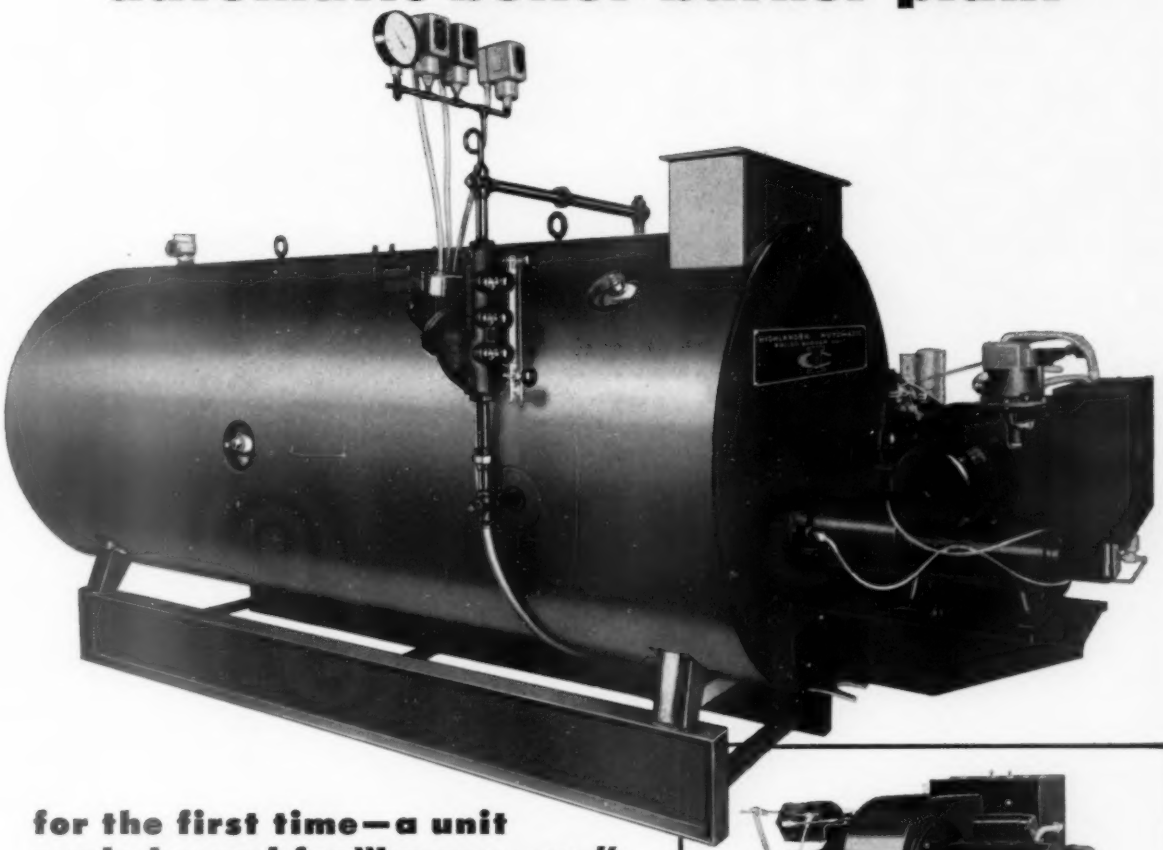
Marshall J. Bean has been promoted to manager of export administration, Airtemp Division, Chrysler Corp. He will be succeeded as manager of sales administration by *Richard J. Leaman*.

In Airtemp's packaged heating and cooling department, *Ralph Achelpohl* has been appointed sales planning manager for commercial products and *George B. Sharkey* has been named market specialist.

Paul O. Bergeron has been named sales manager, Federal Boiler Co., Midland Park, N. J. He has been active in the hydronics industry for more than 15 years and for many years was associated with the heating division and branch house operations of Crane Co.

NEW HIGHLANDER

automatic boiler-burner plant

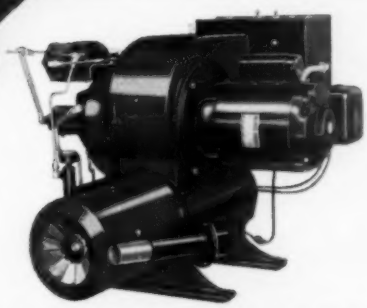


for the first time—a unit made by and for "burner men"

The burner industry has been waiting for an oil burner man's boiler. Industrial Combustion, Inc., puts the burner *before* the boiler with its new Highlander. This completely assembled boiler-burner plant (Scotch-type two-pass unit) has been designed and constructed from the burner specialist's point of view — built to bring out the best efficiency and reliable operation of the burner.

And "burner men" design is just the beginning! The new Highlander will be sold exclusively by authorized Industrial Combustion dealers. It will be installed and serviced by these qualified burner technicians.

Write today for complete information — Dept. FO-70.



HEART OF THE HIGHLANDER is the famous Industrial Combustion burner. Shown is the HEV-E-OIL burner especially engineered to make use of inexpensive heavy oils — number 4 and 5. Number 6 or Bunker C in larger models. Available from 5 to 150 gph.

INDUSTRIAL COMBUSTION INC.

EXECUTIVE OFFICES: 4507 N. OAKLAND AVE., MILWAUKEE 11, WIS.

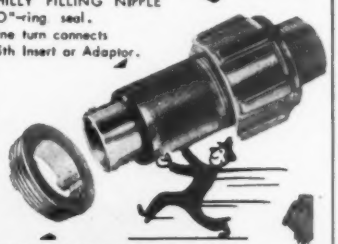
fueloil & oilheat

1 PACKAGE FOR FASTER FILLING

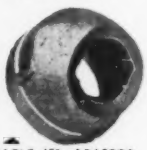
PHILLY ALL-WEATHER CAP
Fool-proof, Ice-free, non-rusting, water-tight.

ADJUST-O-SWIVEL
Leak-proof swiveling for hose or Philly nipple. Repairable, self adjusting.

PHILLY FILLING NIPPLE
"O"-ring seal.
One turn connects with Insert or Adaptor.



PHILLY MALE INSERT
Threads into Fill-Box
Cam-locks with
Philly filling nipple.



MIRACLE 45° ADAPTOR
Female No projections, Built-in Insert, Perfect for close-to-wall fill.

PHILLY DEEP-FILL
For buried tanks.
Whistle signals anywhere.
No measuring,
No adjustments,
No spitting.
All aluminum.

STRAIGHT ADAPTOR
Female, For fill pipes at ground level or above. Built-in Insert.

PHILLY
RAPID-TITE
Fuel Oil Delivery System

PHILLY *RAPID-TITE* DIVISION
PLASTIC AND APPLIANCE CO., INC.
5311 WESTMINSTER AVE. PHILA. 31, PA.

MAIL TODAY

SHOW ME!

Name _____

CO. _____

Street _____

City _____ State _____

Tank protection Plan is sponsored by Hartford Oil Heat Association

THE SAD STORY of the leaking tank has always been a problem in the fueloil industry. In Hartford, Conn., the Oil Heat Association working with the New England Tank Lining Co., Bridgeport, has one answer.

The plan is a simple one—an insurance plan from which even the oilheating dealer makes a profit. Called the "Tank Protection Service" the insurance applies strictly to residential installations of any conventional 275 gal. or smaller basement tank. Eventually, this coverage will be extended to larger and underground tanks.

The tank protection service costs $1.98 per year, per customer. It may be billed directly to the customer by the dealer or it may be absorbed in the annual service contract. Some dealers are paying the entire cost or part of it to gain the promotional advantage of offering free tank repair to all of their customers.

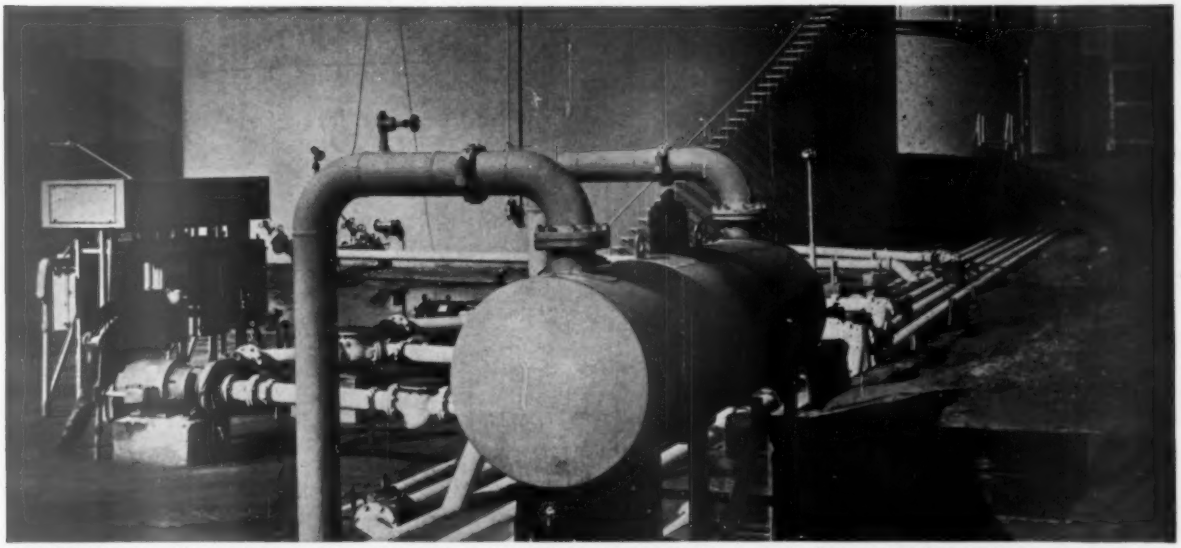
Of the $1.98 charge, the dealer keeps 15 to 25% of the premium as his commission. This percentage is based on a sliding scale depending upon the number of customers serviced, not necessarily the number of actual contracts sold.

A leaking tank is repaired by the glass armor method. After such a repair, the dealer keeps $1.23 of the $1.98 yearly premium. This rebate is based on an actuarial study that indicated that a tank repaired by this method will give no further trouble for more than 20 years.

Bob Lynch, Oil Heat Association of Hartford, regards the plan as a simple and workable arrangement, which assists the oilheating industry's efforts to protect its retail market.

Oilheating organizations interested in additional information about the plan can write either Albert Brand, New England Tank Lining Co., or Theodore Brand, Chicago Tank Lining, Inc., Chicago.

Herman Brand (left) and Albert Brand (right) explain details of the Tank Protection Service to Charles Stubbs, Bridgeport.



PROVIDENCE, R.I.—Storage for 1⅔ million gallons of Sunoco's heating oil; high-speed transport loading; and modern coalescer.

DAYTON, OHIO—Storage for 1¼ million gallons of heating oil; metered loading racks; high-speed pumps; and modern filter.

Sun's new Rhode Island and Ohio facilities speed loadings of cleaner, drier heating oils

Protected by modern filters, the latest in dryers and new tank traps . . . shipped from new refining units . . . delivered through high-speed pumps . . . Sunoco's heating oils are moving faster and faster for more and more distributors.

Choice distributorships for Sunoco's quality-blended heating oils are open in many areas. Blue Sunoco gasoline distributorships are open in a few areas. Sun has one of the lowest dealer and distributor turn-overs in the business. The reason: territorial assignments that assure profitable volume. There are other benefits, too.

Get all the facts by writing today to: Fuel Oil Department FO-6, SUN OIL COMPANY, 1608 Walnut Street, Phila. 3, Pa. *All* inquiries will be *confidential*.

SUNOCO

MAKERS OF FAMOUS CUSTOM-BLENDED BLUE SUNOCO GASOLINES

fuel oil & oilheat

Here's proof

Superior quality forged body —precision machined
Uniform wall thickness —no weak spots
Extra heavy reinforcing rim
Larger diameter cam ears for longer service life
Extra Hi-Strength forged handles —greater economy
Stainless Steel pins —greater safety and longer service
Uniform heavy wall thickness —no weak spots
Recess retains gasket in coupler and assures proper placement
Superior quality forged body —precision machined —accurate tolerances

your best buy is EVER-TITE -the best quality quick couplings

EVER-TITE Standard Adapter and Coupler

Bronze
Aluminum
Stainless
Carbon
Malleable
Hastelloy

You save time and money when you use EVER-TITE COUPLINGS, because you get speedy deliveries—no leaks.

The tightness is predetermined in manufacture so you can be *sure* with EVER-TITE.

The EVER-TITE trademark is a hallmark of dependability. EVER-TITES do the best job in the transfer of every type of product through hose or pipe.

Get EVER-TITE and get the *best*. Ask your distributor now.

EVER-TITE Adapter and Coupler

EVER-TITE Shank Hose Coupling

EVER-TITE COUPLING CO. INC.
254 West 54th Street
New York 19, N. Y.

Dust Plug

Every EVER-TITE saves time and money

Dust Cap
EVER-TITE Dust Protectors

Harvard Study of oilheating Economics presented at Meeting in New England

A JOINT PROJECT to study the economics of New England fueloil marketing was launched some two years ago by the Oil-Heat Institute of New England and the Harvard Graduate School of Business Administration. The results were presented by Walter J. Salmon of the Graduate School on June 6 to a combined meeting of the OHI and the New England Fuel Dealers Association at Portsmouth, New Hampshire.

Based on the 1957 operating results of some 90 fueloil distributors in Massachusetts, here in capsule form are some important disclosures:

The gross profit in that year, or margin, was 29% of sales, total operating expense was 27%, leaving a net profit before income taxes of 2%. However, this profit when applied to the stockholders' or owners' investment represented 9% before income taxes.

Gross Profit

In more detail, the median gross profit was 29.23% of all sales made by the group. This applied to total sales including items other than oil. These were defined as light oil sales at both wholesale and retail, oilheating equipment and service sales and such other products as coal, heavy oil, gasoline "and the many other items which fueloil dealers sometimes sell."

On light oil, at wholesale and retail, gross profit was 27.06% of sales. On retail sales only, the margin was 4.11¢.

Equipment and service sales showed a gross profit, above the cost of materials only, of 45.46%, but the writer of the report doubts if the margin here would cover the cost of labor involved.

On "all other sales," which meant everything beside retail light oil, equipment and service, the gross margin was 24.07%.

Among dealers who had a higher than average proportion of equipment and service sales to total sales the gross profit ratios tended to be higher. This enabled the medium sized and large dealers to show higher over-all gross profits than small dealers.

The total expenses represented 27.21% of sales, and of this labor and subcontract expense represented 16.54%. Truck and automobile expense was 2.94% of sales not including depreciation which came to 1.36% of sales. Occupancy costs (rent, etc.) amounted to 0.98% of sales; sales promotion expense was 0.78% of sales.

Larger dealers typically spent 0.45¢ for salesmen for each retail gallon of light oil sold. Total truck and automobile expense, including payroll and subcontract outlays, was 1.21¢ per retail gallon.

On equipment and service sales material and labor came to 92.13% of income, not including operation of vehicles or overhead expense.

Because the average fueloil business is relatively small, the rate of profit is sometimes involved in the question of compensation for officers or proprietors. The payroll expense for officers, proprietors and partners in 1957 was 4.86% of sales. Net profit before taxes and before deduction of payroll for this group was 7.77% of sales. In comparison, net profit after this payroll deduction and before income taxes was 1.67% of sales.

The growth rate for 1957 in number of fueloil customers was 6.9%. The strongest factor in growth was the ratio of equipment and service sales to retail light oil sales.

Canadian Underwriters' propose tank Standard

A PROPOSED third edition of the Standard for Underground Tanks for flammable Liquids, Subject C58, has been circulated for comment by Underwriters' Laboratories of Canada, 7 Crouse Rd., Scarborough, Ontario.

The draft incorporates a number of proposed amendments. The revisions include a change in the specifications for the use of galvanized steel in underground tanks, bracing of flat or unflanged heads, lifting lugs, and the design and construction of manholes.

BEFORE YOU BUY A PUMP

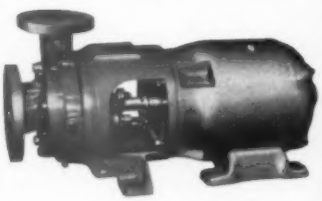
ask yourself these simple questions

1. Will I store above or below ground?
2. Will I unload transports and load delivery trucks?
3. What are my head and delivery requirements?

THEN

Pick the Ingersoll-Rand Centrifugal Pump to suit your needs:

THE MOTORPUMP



The most complete line of close-coupled centrifugal pumps available, ¼ through 75 hp . . . deliveries to 3200 gpm. Designed and built for maximum performance under flooded suction conditions, they operate equally well in any position and require no special mounting or baseplate.

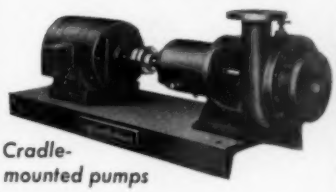
Since better than 80% of all storage facilities are above ground, straight centrifugal pumps or "Vapor-flo" units should be recommended on most installations.

THE "VAPOR-FLO" MOTORPUMP

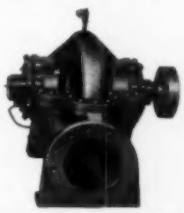
There's no other pump available with patented features as found in the "Vapor-flo" Motorpump. Under flooded suction conditions subject to vortexing or vaporizing, these self-venting units handle and discharge vapors while continuing to pump. They will not vapor-bind or clog . . . are ideal for transport unloading.

Why pay up to 30% premiums and lose up to 20% efficiency with self-primers when not needed. Ingersoll-Rand "Vapor-flo" Motorpumps are available through 7½ hp for deliveries up to 425 gpm.

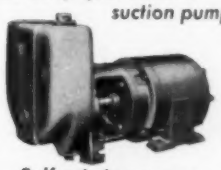
OTHER I-R PUMPS FOR THIS SERVICE



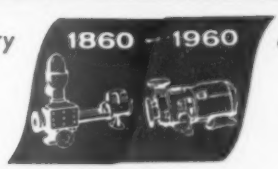
Cradle-mounted pumps



Horizontally split, double suction pumps



Self-priming pumps

a century 

of pump progress

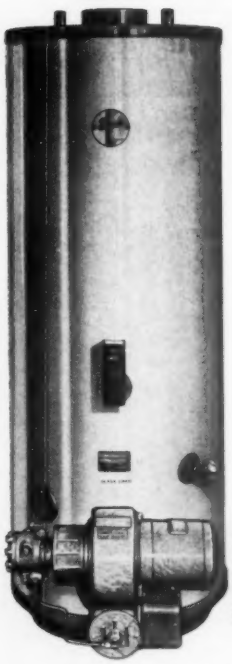
from the leading manufacturer . . .

Ingersoll-Rand

77A9 11 Broadway, New York 4, N. Y.

Glass Lined

OIL WATER HEATERS



THREE SIZES 30 50 70 GALLONS STORAGE

● A size to meet every requirement. Uses pressure burner, number 2 oil and sells at popular prices. Has every feature for volume sales.
Made in large commercial sizes for schools, hotels, hospitals and public buildings. Approved for 180 degree outlet water.
Details on request.

Bock Corporation

110 S. DICKINSON ST., MADISON 4, WIS.

Shipley-Humble hits publicity Jackpot with helicopter emergency Deliveries

A FUELOIL AIRLIFT guarantees York County residents emergency fuel deliveries no matter what the weather conditions might be. Shipley-Humble, York, Pa., has arranged to have three helicopters standby whenever blizzards are in the offing.

The idea is—if you can't get the trucks through the drifts get the fuel-oil over them.

Fuel-O-Copter Service was announced by newspaper and radio advertising last January. To kick it off, a public demonstration was staged.

A helicopter landed on the parking lot of York's big Northgate Shopping Center and remained on public display for more than an hour. Then it took off with a load of fuel and made a delivery to an outlying farm.

On the way, it dropped hundreds of ping-pong balls over the shopping center, each labeled with Shipley-Humble's name. Seventy were labeled in red ink and could be redeemed for merchandise prizes.

The company has placed the helicopters at the emergency disposal of county and city authorities, and the State Police. A telephone call by any authorized official brings the whirlybirds for ambulance service, evacuations, food and medicine drops, or as emergency transportation for doctors, defense officials, and other defense workers.

WHAT'S BEHIND THESE TWO MARKERS?

Underwriter's Laboratories itself cautions you with these words: *"It should be noted that products Labeled or Listed are not necessarily equivalent in quality or merit."***

Every Field Draft Control carries this U.L. marker. But not every draft control that carries the U.L. marker is a Field.

Heating dealers discovered long ago that it pays to *know the difference* — and pays to *pay the difference.*

*"Testing for Safety", October, 1959, Underwriters' Laboratories, Inc., p 12.

FIELD CONTROL DIVISION, Conco Engineering Works, Inc. — Mendota, Illinois
AFFILIATES: Spartan Tool Division • Powered Sewer Cleaning Equipment • Materials Handling Division • Cranes, Hoists • Conco Building Products, Inc. • Brick, Tile, Stone

TEXACO DISTRIBUTOR H. A. SIMMONS, SALEM, OREGON

"After we changed to Texaco Fuel Chief 4 years ago, we found it much easier to sell home owners, industrial and commercial companies. Our over-all sales increased 31% last year. And we like to do business with the Texaco people—they're jobber-minded and glad to be of help." Sell the best...sell **TEXACO**

In addition to Texaco Fuel Chief, Mr. Simmons has 10 Texaco Service Stations, and also sells Texaco Diesel Chief.

5 reasons why it pays to be a Texaco Fuel Chief Distributor

1. Texaco Fuel Chief is clean-burning.
2. Dependable and efficient delivery at all times.
3. Immediate acceptance. Fuel Chief is sold under the nationally famous trademark, the Texaco red star with the green "T".
4. One of the largest producers of heating oil, Texaco is the only petroleum company to build up successful distribution of its products nation-wide.
5. Profitable and proved sales policies.

A PROMISING FUTURE is one of the advantages of being a Texaco Fuel Chief Distributor. There may be an opportunity for *you*. Investigate—send this coupon to Manager, Fuel Oil Sales Division, Texaco Inc., 135 E. 42nd St., New York 17, N. Y.

TEXACO FUEL CHIEF HEATING OIL

FOH-7

I would like complete information about the possibility of teaming up with Texaco as a Distributor of Fuel Chief Heating Oil.

NAME_____

STREET_____

CITY_____

STATE_____

Rochester OHI estimates gas Units in County ready for Replacement

TO ALERT dealers to the possibilities in the gas replacement industry, the Oil Heat Institute of Rochester, N. Y., has prepared estimates of this market.

The association points out that there are large quantities of gas heating equipment about ready for replacement. The early surge of this wave of worn out equipment will be in homes that have chimneys since the "B" vent was not too popular between 1945 and 1950.

It is also emphasized that gas is pricing itself higher and that the oil industry has a good story to tell. One point made by the Institute's newsletter, "Oil Lines," is that the company who has given the homeowner good, reasonable service in the past has a better chance to sell new equipment. Therefore, it is reasoned—it may be smart to service gas equipment.

Potential Conversions from Gas in Monroe County, N. Y.

	Gas Units		READY FOR REPLACEMENT† Centered Average	
Year	Installed	Operating	5 Year	3 Year
1940		1919		
1941	50*			
1942	75*			
1943	75*			
1944	93*			
1945	1200	3412		
1946	1860	5272		
1947	2784	7756		
1948	1875	9631		
1949	3740	13371		
1950	5077	18448		
1951	5439	23887		
1952	2738	26625		
1953	5067	31692		
1954	5849	37541		
1955	6765	44306		
1956	6460	50766	200	
1957	5595	56361	175	
1958	5462	61823	150	
1959			118	66
1960			298	81
1961			661	456
1962			1142	1051
1963			1127	1848
1964			1502	2073
1965			2952	2700
1966			3723	3564
1967			3774	4752
1968			4412	4418
1969			4834	4415
1970			5172	4551

*Estimated.

If estimating 15 year average life, deduct two years from forecast year.

For example, on 15 year basis 1962 on chart would be quantity obsolete in 1960.

†Based on a 17 year average life.

The Rochester OHI starts its case by stating: "The heating industry is about to witness a profound change in the local replacement market. Up to the present time almost all residential heating equipment that has become obsolete or worn out has been either coal or oil. The gas industry has had a clear field . . . To the general public it seems as though the conversion market is a one way street running from coal and oil to gas. It would be difficult to overestimate the effect this has had on the buying public."

Below left is the table prepared to stimulate thinking on the possibility of capturing the gas conversion market. It covers only Monroe County in New York, but does indicate the potential available.

Figures in the table are based on a 17 year average life and the replacement market of gas furnaces is forecast on a centered three year and a centered five year moving average of total gas installations made 17 years ago.

Frank E. Malone, Shell Oil Co., (left) presents a plaque to Julius Loeffler, Commerce Petroleum Co., Chicago at a luncheon in his honor. The occasion marked Loeffler's 35th year of consecutive business association with Shell. During his years in the fueloil industry, he has been active in industry associations. Besides his own heating oil business, Loeffler is a member of the National Fueloil Council, vice chairman of the Oil Heat Council for Metropolitan Chicago, past president and director of the Burning Oil Distributors Association and a past president of the Chicago Oil Men's Club.

MORE SERVICEMEN ARE INSTALLING DELAVAN NOZZLES THAN EVER BEFORE

Look for the difference when *you* install a Delavan nozzle. They'll give you cleaner, quieter, better looking fires time after time.

All Delavan nozzles are bi-metal construction for longer wear and better performance. Delavan nozzles (up to 1.50 GPH) feature the Sintered Filter to provide superior nozzle protection.

TYPE W DELAVAN NOZZLE covers the .50 through 1.35 GPH range. This all purpose nozzle performs excellently regardless of air patterns.

TYPE A DELAVAN NOZZLE produces spray which delivers atomized oil to outer edge of pattern. Recommended for burners with hollow cone patterns.

TYPE B DELAVAN NOZZLES produce a solid cone spray which distributes oil droplets in a uniform pattern. Especially recommended on large burners for fast ignition.

For cleaner, quieter, more stable, full, smoke-free fires . . . specify Delavan.

DELAVAN Manufacturing Company
WEST DES MOINES • IOWA

Canadian Representative — Ontor, Ltd.
12 Leswyn Road, P.O. Box 608, Station T, Toronto 10, Ontario, Canada

Letters

JOHN BLONDEL & SON
Montclair, N. J.

Editor:

Here is a summary of a survey that we recently completed in our heating division. We picked at random—in other words, a spot check—some 500 calls that were made between November 1, 1959 and March 15, 1960. No distinction was made as to whether the customer was on a call basis or had an annual service agreement. Actually, after the 500 calls were analyzed, we did go back to see which were on a call basis and found the following: Contract — 272; Call basis — 220; Guarantee — 8.

The above figures did not surprise us as our customers are about equally divided into the two types of service and hence the spot check should follow approximately the same proportion. Please note that of the 500 calls screened, only 8 were those falling into the first year guarantee category, in other words our new jobs give us very little trouble.

Reason for service Call		
Motor Failure		
	Overload	32
	Other	10
Ignition		
	Carbon	22
	Not Carbon	13
Out of Oil		
	(usually for credit reasons)	13
	Control Trouble	99
Low Water	(off on L.W.C.O.)	18
	Water in Oil	6
Miscellaneous mechanical Trouble		60
	Flame Adjustment	15
	Heating System Trouble	23
Smoky fire, clogged strainers,		
	nozzles, lines, etc.	130
Pump trouble, not related to sludge		18
	Electrical Trouble	12
Furnace or chimney sooted		19
	Oil leak	10

JOHN DeC. BLONDEL
President

BRELSFORD HEAT SERVICE
Prospect, Ohio

Editor:

In reference to the article, "How to end loss-of-prime Trouble," on page 56 of the April 1960 issue of FUELOIL & OIL HEAT.

If the installer used ½" suction lines for three years without trouble, I would say he was lucky. Why use ½" lines? For example, Sundstrand

New PETRO oil fired water heater

HIGH RECOVERY RATE
Three sizes have recovery rate of 2.25, 3.33 and 4.5 gallons per minute. With 30 gallon tank capacity, this means these models can supply 55, 63 and 75 gallons of hot water in 10 minutes.

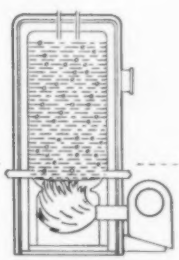
TUBELESS TANK—LARGEST HEATING SURFACE
Entire tank surface is a heating area—much larger than a fire tube tank.

5-YEAR UNCONDITIONAL WARRANTY ON TANK
Plus an additional five years on a prorated basis. Tubeless design eliminates cause of most tank maintenance.

GLASS LINED, WITH ANODE PROTECTION
Vitreous enamel lining provides clean, rust-free water and prevents corrosion of metal surfaces.

EXTREMELY EASY TO SERVICE
All burner parts are readily accessible. Divided cover permits access to heating surfaces without disturbing piping connections.

A COMPLETE PACKAGE, READY FOR SERVICE CONNECTIONS
Burner and controls are factory wired and tested, ready to be hooked up.



This advanced Petro water heater is well designed and well built. In performance it is economical and dependable. It can be sold in volume on a profitable basis. For more information on technical features and dealer opportunities, please mail coupon.

PETRO®

Makers of quality heating and power equipment since 1903

PETRO
3223 W. 106th Street, Cleveland 11, Ohio

Please send me literature, specification sheets and dealer information on the PETRO oil fired water heater.

Name_____

Company_____

Address_____

City_____ Zone____ State_____

IT'S NEW!
VISIBLE REGISTER
D D D D
GALLONS

PRESENTING

THE NEW ROCKWELL "T-120" ROTOCYCLE TANK TRUCK METER

FULL 120 GPM CAPACITY...

with all the accuracy, installation ease and operating features you need

A Complete Metering System—The Rockwell "T-120" is the big brother of the highly successful Rockwell "T-70". It combines the accurate measurement of a dependable Rotocycle meter with an efficient air separator, an easy-to-clean strainer, a smooth closing automatic shut-off valve and a ticket printing register. All elements are field proven and are ready to go to work with profit for you.

Saves Space and Weight—Due to the liberal use of lightweight castings, the entire "120" system is less bulky. It is compactly designed to give you the most measurement in the least space. Savings made possible in space and weight can be applied advantageously to greater payloads.

Easy to Install—In this design you have the option of three inlet positions and of two outlets. Thus the Rockwell "120" can be installed in either old or new truck compartments with the utmost flexibility. Right or left hand assemblies can be made without using extra parts.

Smooth, Automatic Shut-Off—To pre-set a delivery the operator just dials the quantity in advance by depressing levers under each register wheel, then opens the valve control and the meter "counts down" and shuts itself off in easy stages as the zero point is reached.

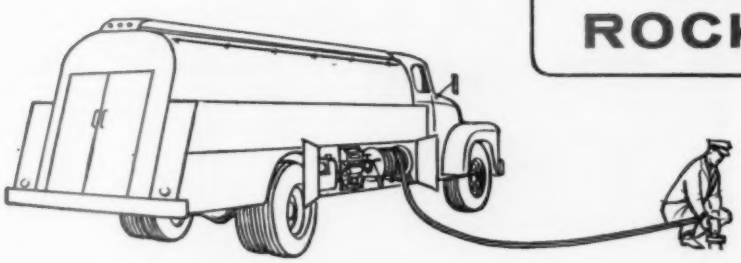
Rotocycle "Flo-ward" Measurement—In the Rockwell "120" you gain the exclusive advantage of an all-revolving measuring element that turns quietly and easily on anti-friction bearings without metal-to-metal contact to assure years of accurate, trouble free measurement.

For further details check your Rockwell jobber, your nearby Rockwell district office or write us. Rockwell Manufacturing Company, Dept. 122G. 400 N. Lexington Avenue, Pittsburgh 8, Pa. In Canada, Rockwell Manufacturing Company of Canada, Ltd., Box 420, Guelph, Ont.

TRUCK METERS

another fine product by

ROCKWELL



*TRADE IN YOUR OLD VOLTAGE TESTER!

READ

voltage and amperage in a snap!

A voltage "indication" doesn't give you all the information you need to do a job right. You want a precise voltage *reading*, measured on a calibrated scale... and you get it with the AMPROBE JR. But sometimes voltage is only half the story. Most jobs require an accurate *current* reading too. The pocket-size AMPROBE JR. provides it – in a snap – *without* interrupting service! Why settle for anything less?

*SPECIAL OFFER

Trade up to an AMPROBE JR. *now*. For a limited time only, we'll give you a sturdy leather case plus the AMPROBE ENERGIZER (to multiply the JR.'s sensitivity *ten times*)—an *$8 value*—for *only $1* and your obsolete voltage tester! The leads come with the JR. Snap up this offer today—at your distributor.

Amprobe Jr.
snap-around volt-amp tester
$19.85

PYRAMID INSTRUMENT CORPORATION, LYNBROOK, NEW YORK
Serving the Electrical Testing Needs of Industry

pumps have ¼" suction and return ports. I am of the opinion that ½" puts too much of a load on the unit. Also, too many servicemen are under the false impression that a two-line system will purge itself. I have bled the pumps on many two-line systems that were dubbed as hopeless and had trouble-free operation.

Do this on all burners and your lockout troubles will be over:

Use ⅜ OD copper tubing. Use flared fittings. Use a duplex tank fitting. Use only one piece from tank to burner. Do not use connectors under the ground. Install a check valve, vertically, at the burner. A ball check valve will hold the prime in ⅜" OD pipe (copper tubing). I've used them for the past 11 years without one single failure. Preferably, bury the lines in sand and use new lines. Do not use old or used copper underground.

Here at Prospect, Ohio, service is our business, or I should say my business. After five years of oilburner service with a major oil company, I went on my own. There is good money in service if you make one call do the job.

Here are three reminders:

Do not clean nozzles—replace them.

Check the draft over the fire.

Install an electric delayed valve in the burner feed line.

M. V. BRELSFORD

GENERAL ELECTRIC CO.
Western Springs, Ill.

Editor:

Thank you for your fine coverage of W. J. Hein's article, "Spark gap Voltages," in your February 1960 issue. An error in the article has been called to my attention.

The captions appearing under Figures 5 and 7 should be transposed. In their present positions they change the meaning of the text material.

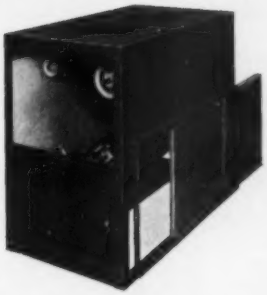
LAWRENCE J. MATTES
News Bureau

Editor's comment: We are pleased to publish the foregoing correction. Readers who studied this highly technical article could tell from the text that the captions for Figures 5 and 7 were transposed; the text itself was correct.

The HOTTEST DEAL in SUMMER COOLING

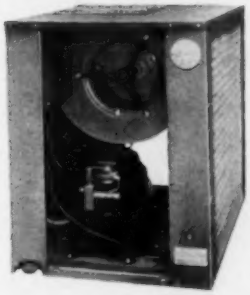
New . . . 2 or 4 Ton Condensing Unit Top-mounted condenser coil . . . operating noise reduced to minimum . . . outdoor installation.

Round, Plenum Evaporator . . . more surface in less space . . . vertical condensate drainage.



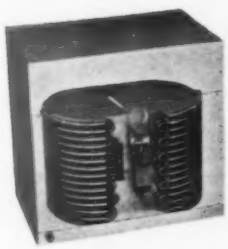
New . . . 3, 4 or 5 Ton Blower-Evaporator Unit . . . vertical or horizontal discharge . . . end, top or side intake. (Shown vertical with side intake.)

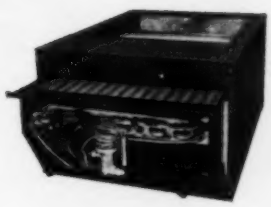
Flat, Duct Evaporator . . . heavy gauge enameled cabinet . . . built-in drain pan.



3 or 5 Ton Condensing Unit . . . top discharge with centrifugal blower . . . unsheltered outdoor installation.

Counterflow Evaporator slides into accessory cabinet . . . zinc coated drain trays.





The phenomenal sales of the new Moncrief Air Cooled Condensing Units and companion Evaporator Coils leave no doubt that Moncrief means business in summer cooling — extra business for you.

With a complete line of 2, 3, 4 and 5 Ton Units — low prices — uncomplicated design and rugged construction — easy installation and service — and prompt delivery from our own manufacturing plant — Moncrief puts you in the air conditioning business the competitive, profitable way.

In addition, Moncrief gives you outstanding features to sell — Condensing Units with 16-gauge, zinc-dipped cabinets and upward air discharge — the unique, circular Plenum-Type Evaporator — the versatile Blower-Evaporator for either horizontal or vertical air discharge — and furnaces with plentiful blower capacity built-in to handle air deliveries for cooling.

Call your Moncrief Wholesaler, now. Enjoy the Moncrief price advantage without the penalty of a big inventory.

MONCRIEF

THE HENRY FURNACE COMPANY · MEDINA, OHIO

HEATING AND AIR CONDITIONING UNITS

MONCRIEF SINCE 1895

FURNACE PIPE AND FITTINGS

Gas and Oil Winter A. C. Units . . . Plenum Type Evaporators.

Gas and Oil Counterflow Units . . . Counterflow Evaporators.

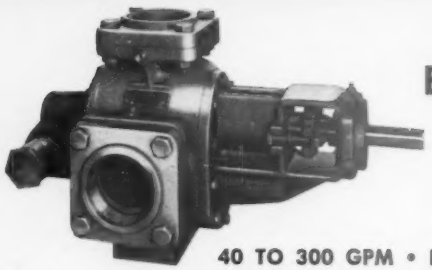
Gas and Oil Horizontal Furnaces . . . Duct Type Evaporators.

Gas or Oil Basement A. C. Units . . . Plenum Type Evaporators.

Gas or Oil Combination Year 'Round A. C. Units . . . Air or Water Cooled

For bulk plant and transportation applications where conditions demand the best...choose the best

ROPER
ROTARY PUMPS



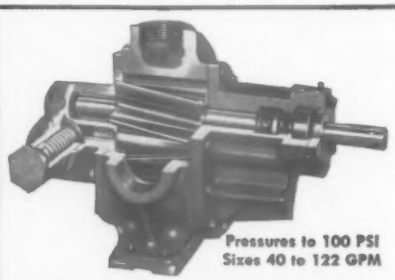
Built for fast, cost-saving deliveries

40 TO 300 GPM • PRESSURES TO 100 PSI

Time is money! And speedy Ropers help keep deliveries on schedule because they make short work of liquid transfer . . . their rugged, service-proved construction makes them highly dependable for day-in, day-out heavy duty operation. There's a Roper in the size to fit your needs, whether pumping thick or thin clean liquids. Next time—specify Roper!

For Local Delivery
Fig. 3605
Tank Truck Pump

Cast iron pump with hardened iron helical gears and steel shaft. Handles thin or thick liquids . . . operates smoothly and quietly in either rotation. Mechanical seal is self-adjusting; precision-lapped mating surfaces. Series 3600 also available with packed box.



Pressures to 100 PSI
Sizes 40 to 122 GPM

For Bulk Plants
Series 3600 Pump

Furnished on steel bed plate with or ready to receive motor; complete with totally-enclosed anti-friction gear reduction. Use indoors or outdoors; no pump house needed. Three gear ratios available.

Pressures to 100 PSI
Sizes 30 to 300 GPM

ROPER
ROTARY PUMPS

ROPER HYDRAULICS, INC.
Commerce, Georgia

Simon Dimet awarded Brotherhood Citation

SIMON DIMET, Simon Oil Co., Niagara Falls, N. Y., received the 1960 brotherhood award from the Niagara Falls Chapter, National Conference of Christians and Jews.

The *Niagara Falls Gazette* had this to say about the award:

"Niagara Falls Chapter, National Conference of Christians and Jews could not have chosen a more worthy recipient of its 1960 Brotherhood Citation . . .

"Since he came here from Russia in 1916, Mr. Dimet has preached and practiced brotherhood and tolerance. He has served numerous social, cultural and civic causes without regard for color, race or creed. His business success has been matched by the wealth of esteem which he has won through service to others . . ."

OHI, Long Island, cost Study shows gas Heat costs more

A STUDY OF HEATING COSTS, done for the Oil Heat Institute of Long Island (N. Y.) by Allen J. Johnson, Lansdowne, Pa., reveals that natural gas costs from 36.2% to 93.8% more for heating in Nassau and Suffolk Counties, N. Y.

In a 20-page report, Johnson includes comparative costs, degree-days, monthly consumption, Btu studies and notes on power, ignition, service and efficiency.

Tables cover consumption for homes from 1,000 to 3,000 gallons annually, according to heating oil prices in a range from 13 to 16¢.

Johnson took issue with the free service offer of many utilities, pointing out that it covers only the safety aspects of the installation, which "they are virtually obligated to watch for their own protection." The other components on heating installations, which cause most of the service complaints, he explained, simply are not covered by most utility service policies.

Included in the study is a table showing for the Long Island area increased cost of natural gas over fuel-oil for selected prices and gallonages.

"We Average Better Than 200 Gallons Per Customer Delivery–With No Run Outs!"

Heling Bros. Ups Per Delivery Gallonage 22% Using Singer Fuel Use Computer

"We've found the Singer Fuel Use Computer takes the guess-work out of scheduling deliveries" says Walter C. Heling, president of Heling Bros. Fuel, Inc., Lindenhurst, N. Y. "We have proven to even our most skeptical customers that the computer enables us to estimate their oil reserves almost exactly at all times."

Once having gained customer confidence, Heling Brothers was able to school nearly all of them to scheduled area delivery. Result: Customer peace of mind in the knowledge that automatic service will keep their oil reserves up. Customers no longer need to check oil reserve levels.

"We recorded an increase of 22% per delivery gallonage over a comparable period of time for preceding year," says Heling. "With automatic delivery we cover as many miles and serve the same number of customers better—with one less truck. This all adds up to three fewer stops per customer for the heating season."

"The Singer Fuel Use Computer creates savings in manpower; enables us to route our trucks more advantageously; and has increased the average drop to 200 plus gallons per delivery" says Heling Brother's dispatcher Bernard Wolf.

2028

Find out how the Singer Fuel Use Computer can help you make maximum profits in your business.

HRB-SINGER, INC.

A SUBSIDIARY OF THE SINGER MANUFACTURING COMPANY

90 Schureman Street, New Brunswick, N. J.

Manufacturers don't have to worry about Mrs. Perkins' "frettin"

"Young man, I've told you, and told you that furnace just doesn't heat my bedroom closet. Now I want it fixed!"

About this time you have to set your jaw and once more explain the furnace you installed can't do everything.

This type of problem is foreign to manufacturers, but not to dealers. Lennox is acutely aware of the many "little things" their dealers have to put up with. This knowledge comes from constant contact in the field, for Lennox values customer satisfaction as much as you do. We have learned through experience and value the fact that the heating and air conditioning business is *centered around the dealer!*

If you aren't getting the solid backing you deserve from your supplier, take the time to get the complete Lennox story. Call or write today. No obligation.

LENNOX *World leader in indoor comfort for home, business, schools*

Lennox Industries Inc. founded 1895 • Marshalltown, Iowa • Columbus, Ohio • Syracuse, N. Y. • Fort Worth, Texas • Salt Lake City, Utah • Decatur, Ga. • Los Angeles, Calif. • Des Moines, Iowa • Lennox Industries (Canada) Ltd. • Toronto, Montreal, Calgary and Vancouver

Tattle
DOT 7C Tale
TRADEMARK

OIL TANK GAUGE

★ DESIGNED FOR PERFORMANCE
★ MANUFACTURED FOR QUALITY
★ PRICED FOR VOLUME SALES

Better 7 WAYS

1. An easy-to-read scale that is plainly visible in even the darkest places.
2. All-weather plastic top and guaranteed overall rugged construction.
3. Designed and engineered for inside or outside installation.
4. Heavy die-cast plug.
5. SPRING STEEL flexible float rod.
6. All moving parts hinged on durable BRASS pivots.
7. No maintenance, repair or regulation after installation.

for 1½" and 2" OPENINGS

Dot 7-C ®

homeward Products Inc.

3420 S. W. 9th St.
DES MOINES, IOWA

Mr. Dealer

Stock this fast-selling gauge with many exclusive features not found in higher priced gauges.

WRITE TODAY FOR OUR LOW PRICES AND SAMPLE GAUGE

Essex County Dealers survey service Methods

THE ESSEX County Dealers Association of New Jersey recently sent a questionnaire to its members on oil-burner servicing policies. Among those replying 89% operate a service department, the remainder subcontract this work.

A service manager is employed by 39% of the companies and his salary ranges between $95 to $200 a week with the average service manager earning $125. Service mechanics averaged $110 per week and helpers $75.

Most of the companies (83%) offer 24-hour service and three-fourths of them answer calls after midnight. A different charge is made to customers for off-hour service by 22% of the companies.

According to the survey the average minimum charge for a service charge is $4. Two-thirds of the companies give some free service to their customers, but in most cases this is very limited.

Repair or replacement of combustion chambers is included in the annual service contract by 36% of the companies; and 19% of the firms include maintenance of the fueloil tank.

Commercial or industrial burners are serviced by 56% of the companies. And here the average charge per call amounts to $8 or $6.50 per hour.

These dealers estimated that each service call cost them on the average of $4.

Cruise to Bermuda is scheduled in Fall by Oil Heat Institute

THE NEXT MEETING of the board of directors of the Oil-Heat Institute of America, Inc., will be held aboard the S. S. Queen of Bermuda en route to Bermuda. The ship will leave New York City October 29 and return November 4.

The Distribution Division will sponsor a management conference for oil-heating dealers on October 30. On the return trip the Distribution Division Board of Directors, Domestic Manufacturers', C-I Manufacturers' and Technical Division will meet.

Reservations should be made through the OHI, 500 Fifth Ave., New York 36, N. Y. A $50 deposit is required.

Preliminary plans are underway for future national meetings of OHI. The 1961 convention will be held in Washington, D. C., April 23-26. The 1962 convention and exposition is scheduled for Chicago early in April.

Norton heads Oil Heat Council of Western Massachusetts

RUSSELL D. NORTON, Tait-Maynard Fuel Co., Springfield, has been named president of the Oil Heat Council of Western Massachusetts. Serving with him will be G. W. Johnson, and D. S. Tufts, vice presidents; Wilburn J. Hogan, treasurer, K. F. Fletcher, executive secretary.

Directors are: G. L. Auth, W. H. Flood, J. L. Grimaldi, J. B. Punderson, A. V. Rivest, B. W. Schorr, and R. K. Swett.

C. A. Newcomb, Raleigh, N. C., (left) receives a special award from A. J. Carey at the recent North Carolina Oil Jobbers Association convention in Pinehurst. He was cited for his work in establishing an oilburner school at North Carolina State College.

The presentation was made following the fueloil session of the convention where Dick Wright, Iron Fireman; Robert Barr, Jet Heet, Inc.; and Robert Gilmartin, Gulf Oil Corp., spoke.

SPEED KLEEN®

Provides benefits no other filling system offers

"NEW INCREASED PUMPING SPEEDS"

"You bet we are happy. Since we installed Time Saving Fills equipment, and increased pumping speeds, our delivery rate has increased by over 200 gallons-per-hour. Our drivers are very pleased with this new method of delivery. So are all of our customers."

Walter McElfish is secretary of H. M. Stauffer & Sons, a leading fuel oil dealer in Lancaster, Pa. Like hundreds of outstanding dealers, large or small, his company is saving money with the Speed Kleen tight-fill system.

MADE FOR OIL MEN BY OIL MEN!

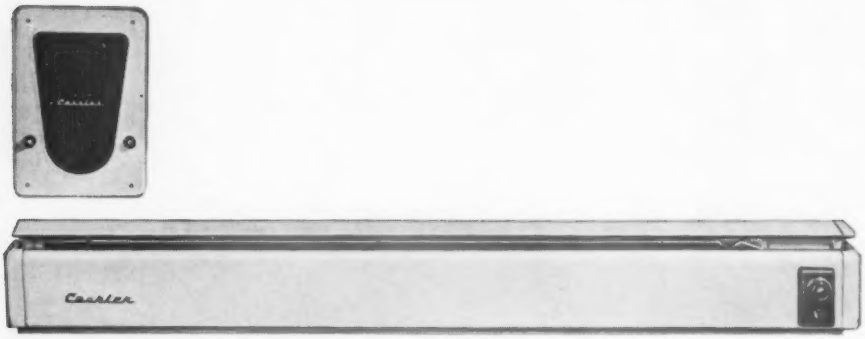
1. *Nozzle Tube* has 5-year warranty. Tube drains deep inside like funnel. Locks tightly with twist of a wrist.
2. *Fill Cap* is chained to pipe. Tamper proof, can't be misplaced or dropped. Available with name plate.
3. *Flush Sidewalk Cap* self-ejects quickly. No threads to freeze. Sturdy, water-tight.
4. *Underground Drop-In Tube* saves you up to 75 per cent of filling time. Portable, anchors tightly, eliminates measuring tank, always vents completely. Whistle warns when full.

EXTRA BENEFITS AND PROFITS!

- Faster, safer fills up to 100 gpm
- Increased customer satisfaction through prompt, clean deliveries
- Trouble-free fills that create more employee efficiency and good will
- Free driver educational program at York, Pa.
- Greater output that saves you up to $5.00 a year on every customer

TIME SAVING FILLS, INC.

PHONE: YORK 6119 · 140 W. MARKET STREET · YORK, PA.



CARRIER ELECTRIC HEATERS

More and more homeowners are asking for electric heating—and Carrier provides the best answer in a complete line of baseboard panels and wall inserts for any new home construction or remodeling job. No matter what the size and shape of the space, there's the ideal solution in the Carrier line. Baseboard panels available in two models (one with optional built-in thermostat) in capacities that range from 341 to 4265 Btuh. Fan-driven wall inserts also available in two models, with capacities ranging from 2559 to 13,648 Btuh.

ONLY A CARRIER DEALER HAS EVERYTHING

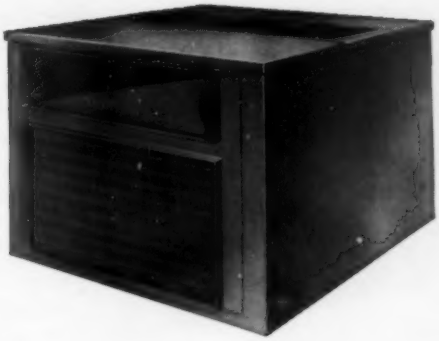
for residential heating!

CARRIER AIR PURIFIER

Latest product of Carrier research, this sensational new unit cleans the air and humidifies in winter. Through a unique self-cleaning process, it filters the air of odors, removes pollen and other harmful elements. Easily attached to a forced air furnace or air conditioning system. The newest Carrier exclusive for Carrier dealers!

BETTER AIR CONDITIONING FOR EVERYBODY EVERYWHERE

Carrier



CARRIER CLIMATE CENTER

Another Carrier first! Dramatic Climate Center enables the homeowner to tell his weather at a glance, dial the climate he likes best, also make sure his air conditioning system is operating efficiently and economically. All this from an 8 x 14 inch satin aluminum panel that installs easily between the studs in any room. An exclusive for Carrier dealers!

CARRIER HEAT PUMP WEATHERMAKERS

The line is complete from ½ ton to 10 tons. It includes a Portable for a single room, one-piece units for smaller homes and two-piece models for larger homes. The larger Carrier Heat Pump Weathermaker* models feature "Climate Balanced Design," which provides maximum working efficiency over the entire range of year-round temperatures.

Whether it's gas, oil or electric heat, only a Carrier dealer blankets the residential field with a complete line of models for every need.

Completeness of line, however, is only part of the picture. A Carrier dealer also has a steady stream of new products to offer—products that lead the field in technical developments. Latest example: the Air Purifier!

What's more, Carrier backs its dealers with everything to build greater volume—engineering help on difficult jobs, training in modern techniques, special credit on inventory, liberal financing help, promotional help—many more.

Some of the residential heating products are shown here. There are many more. And there is also a complete line of Carrier residential air conditioners—as well as complete lines for both commercial heating and air conditioning. No wonder the Carrier franchise is the most valued in the industry! Interested? For information, call the Carrier distributor listed in the Yellow Pages. Or write Carrier Corporation, Syracuse 1, New York.

CARRIER GAS AND OIL FURNACES

Carrier Winter Weathermakers are designed from the ground up as "Furnaces with a Future"—for the easy addition of summer cooling at a later date. The casing is amply wide for cooling air flow. All models are approved for .5-inch static pressure. Installs easily in utility room or closet near living areas. Extremely quiet because the new Carrier Floating Blower Mount suspends motor and blower inside the blower housing, eliminating vibrations. Four models: upflow, downflow, loboy and horizontal. Gas-fired bonnet capacities: 56,000 to 160,000 Btuh. Oil-fired: 84,000 to 185,000 Btuh.

*Reg. U.S. Pat. Off.

WITH

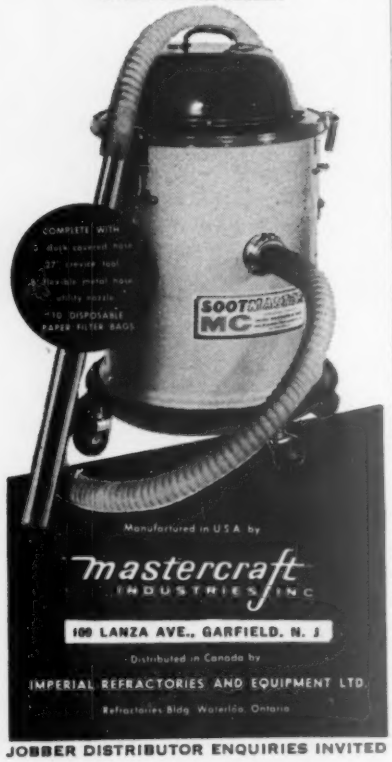
SOOTMASTER

MODEL 581

The engineering principles incorporated in the SOOTMASTER Model 581 feature a larger filter area designed for lasting suction and maximum filtration. These, combined with Mastercraft disposable paper filter bags, provide a double filter action that prevents soot leakage, eliminates costly dust bag failures and insures longer motor life. New power cooling diffused exhaust design eliminates annoying exhaust blast and quietly distributes escaping air in all directions without disturbing the dust accumulation found on boiler room walls and rafters.

Lightweight and three convenient carrying handles make this machine easy to carry and easier to empty with the aid of the Throw-away Bag. The cannister is protected by a new dollie assembly that not only acts as a mount for four swivel casters but also is encased in a rubber bumper that protects walls and objects from being marred. —

LITERATURE ON REQUEST



JOBBER DISTRIBUTOR ENQUIRIES INVITED

Northwest promotion Program encourages equipment Sales

DETAILS of how dealers in the Pacific Northwest can participate and gain from the sales promotion program being jointly financed by major suppliers and Oil Heat Institute chapters in the area have been circulated among its members by the OHI of Oregon. The program is designed to stimulate equipment sales by equalizing costs with competitive fuel installations.

Any retail seller of heating oils of a participating supplier is eligible to make application for the sales promotion allowance subject only to the limitation of funds made available by his supplier.

The sales promotion allowance may be used only for the installation of new central heating oil-fired equipment where competitive fuels are available.

The allowance may not be used to replace an existing oilfired central heating system.

Dealers apply for the allowance on forms provided by the OHI chapters and furnish the information requested. The maximum amount which may be applied for is $82.50 for each new oil heat installation.

Each applicant must equal the amount applied for by the investment of cash and/or substantiated time, effort or sales promotion expenditures.

The program started June 1 and will run through December 31. No applications will be accepted after December 1 unless completion date is within 90 days.

Old Timers' Club planning September Gol-Fun Parties

TWO GOL-FUN PARTIES are planned by the Old Timers' Club of the Oilburner Industry. The Eastern get-together is to take place at the Plainfield Country Club, Plainfield, N. J., on September 22 and the Midwest party will be held on September 29 at the River Forest (Ill.) Golf Club.

Tickets for both affairs are $15 for those who will play golf and $10 for non-golfers; both are open to members and guests with prizes for all who attend.

The committee for the Eastern party consists of James W. McGuire, Edmund J. Grady, Chris Jensen and Tim R. Loizeaux, Sr. Jim McGuire at 370 Lexington Ave., New York 17, N. Y., is taking reservations.

In the Midwest Charles C. Cochran, Charles R. Bennett and F. J. Moran are handling the arrangements. Reservations should be sent to Charlie Cochran at 7350 Lincoln Ave., Chicago 46, Ill.

Conference and Trade Show scheduled by Iowa Jobbers

THE IOWA Independent Oil Jobbers Association is having a two-day oil-heating conference and trade show at the Fort Des Moines Hotel, Des Moines, Ia., July 12 and 13.

Charles Burkhardt, Oil-Heat Institute of America; Robert Gray, National Fueloil Council and FUELOIL & OIL HEAT; and L. S. Marshman, Mobil Oil Co., are the featured speakers and discussion leaders.

In addition to this meeting, the group is planning its sixth Management Conference at the State University of Iowa, Iowa City, October 17-19. Both industry and University personnel will direct the course.

Charles H. Burkhardt has been appointed Managing Director of the Oil-Heat Institute of America, Inc., New York. The announcement was made by Fred Heaney, OHI president.

Burkhardt has been associated with the oilheating industry since the mid-thirties. He joined the Institute six years ago and for the past five had been national secretary of the Distribution Division—a position he will continue to fill along with that of secretary-treasurer of the Institute.

IT'S NEW...IT'S AMERICAN-STANDARD

Four reasons why new DH Arcoflame Burner is ideal for conversions and replacements

Die-cast aluminum housing is sturdy, yet light. This precision casting assures exact alignment of motor, fan and fuel unit—has neat appearance.

3 mounting arrangements make the burner suitable for every modernization job. DH Arcoflame can be sling-(hanger-) mounted, or furnished with a pedestal or flange.

4 disk-turbulator combinations cover the complete firing range, making selection simple and keeping inventory low. Firing range: 0.65 - 3.00 gph.

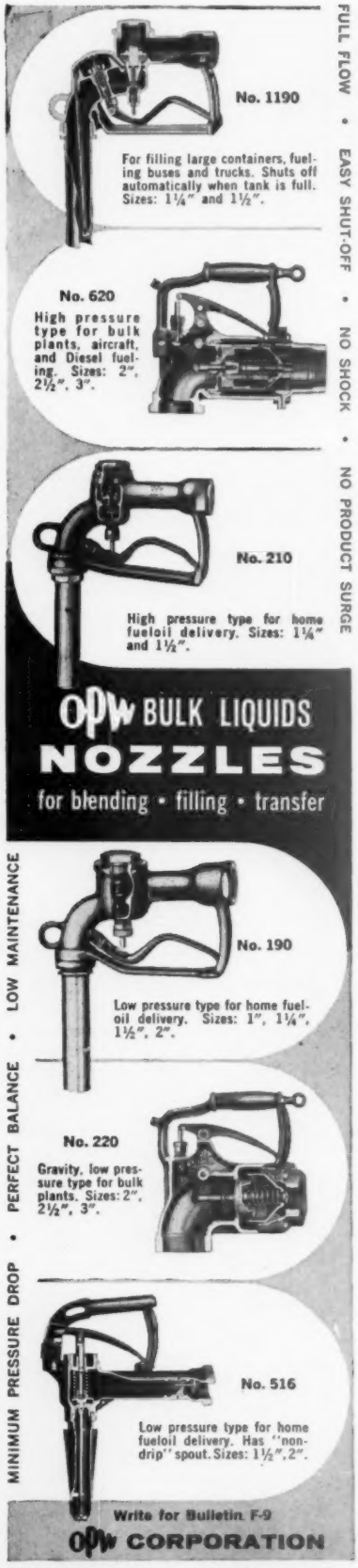
New Exact-aire adjustment control saves time and trouble. You set the extremely accurate slide adjustment for the air-oil mixture without tools.

Listed by Underwriters' Laboratories, Inc. and approved by all local authorities. For more information see your American-Standard distributor or write AMERICAN-STANDARD, PLUMBING AND HEATING DIVISION, 40 West 40th Street, New York 18, New York.

American-Standard and Standard® are trademarks of American Radiator & Standard Sanitary Corporation

AMERICAN-Standard
PLUMBING AND HEATING DIVISION

fuel oil & oilheat


No. 1190
For filling large containers, fueling buses and trucks. Shuts off automatically when tank is full. Sizes: 1¼" and 1½".
No. 620
High pressure type for bulk plants, aircraft, and Diesel fueling. Sizes: 2", 2½", 3".
No. 210
High pressure type for home fueloil delivery. Sizes: 1¼" and 1½".
OPW BULK LIQUIDS
NOZZLES
for blending • filling • transfer
No. 190
Low pressure type for home fuel-oil delivery. Sizes: 1", 1¼", 1½", 2".
No. 220
Gravity, low pressure type for bulk plants. Sizes: 2", 2½", 3".
No. 516
Low pressure type for home fueloil delivery. Has "non-drip" spout. Sizes: 1½", 2".
FULL FLOW • EASY SHUT-OFF • NO SHOCK • NO PRODUCT SURGE
LOW MAINTENANCE • PERFECT BALANCE • MINIMUM PRESSURE DROP
Write for Bulletin F-9
OPW CORPORATION
2723 Colerain Avenue, Cincinnati 25, Ohio

Federal Agencies enroll in special OHI Course

DESIGNED to inform and advise Federal agencies in matters pertaining to the specifying of fuels was a course held at Howard University, Washington, D. C. The course was conducted by the Oil-Heat Institute of America, Inc., and 15 agencies were enrolled.

Seven lectures given by authorities in the oilheating industry were held beginning May 25. The sessions were held one day and in one instance two days a week in the Mechanical Engineering building and ran from 9 a.m. until 3:30 p.m. The course ended June 22.

Charles H. Pesterfield, professor of mechanical engineering at Michigan State University and Technical Secretary of OHI's Commercial-Industrial Section, and Larry D. Sibley, Electronics Corp. of America and co-chairman of the C-I Section, drew up the course.

Representatives from these companies presented lectures: Esso Research and Engineering Co., Linden, N. J.; Bacharach Industrial Instrument Co., Pittsburgh, Pa.; Ace Engineering Co., Chicago; Davis Engineering, Wallington, N. J.; Iron Fireman Manufacturing Co., Cleveland; Minneapolis-Honeywell Regulator Co., Minneapolis, Minn.; Electronics Corp. of America, Cambridge, Mass.; and H. Leiblich Co., New York.

New Silver Shield Programs formed in Pontiac and Lima

FORMATION of two new Silver Shield programs to be administered by local Indoor Comfort Bureaus has been announced by the National Warm Air Heating and Air Conditioning Association, Cleveland.

Dealers in Lima, Ohio, and Pontiac, Mich., have gotten together to sponsor the program which is designed to upgrade warm air systems according to national standards. They have attended training schools using the manuals of the Warm Air Association and meeting weekly for a period of four months in order to learn the proper way to install ducted heating and airconditioning equipment.

Other Silver Shield programs are now in operation in Kalamazoo, Lansing, Philadelphia, Niagara Falls, Nashville and Sharon, Pa.

Comfort Crests to be awarded Builders by West Coast OHI's

A NEW PROMOTION to stimulate interest among builders in oilheating has been started in the Pacific Northwest by the Oil Heat Institute of Oregon and Southwest Washington.

The "Comfort Crest" award is given to selected home builders in the area after a study of their new homes has been conducted by OHI. Specifications for heating engineering must be met by all homes nominated for the award.

A vigorous publicity program including local newspaper advertising, site signs and in-home displays will enforce the selectivity of the program. Nearly 20 builders have been nominated to the honor list of award holders. The crest offers a guarantee of heating quality to the home buyer and assures that the output of the heating plant will keep the home comfortable under all weather conditions.

Jim Grady resigns from Westchester Association

JAMES E. GRADY has resigned as executive secretary of the Oil Heat Institute of Westchester, Inc., Scarsdale, N. Y., to accept a position in the marketing division of a large integrated oil company.

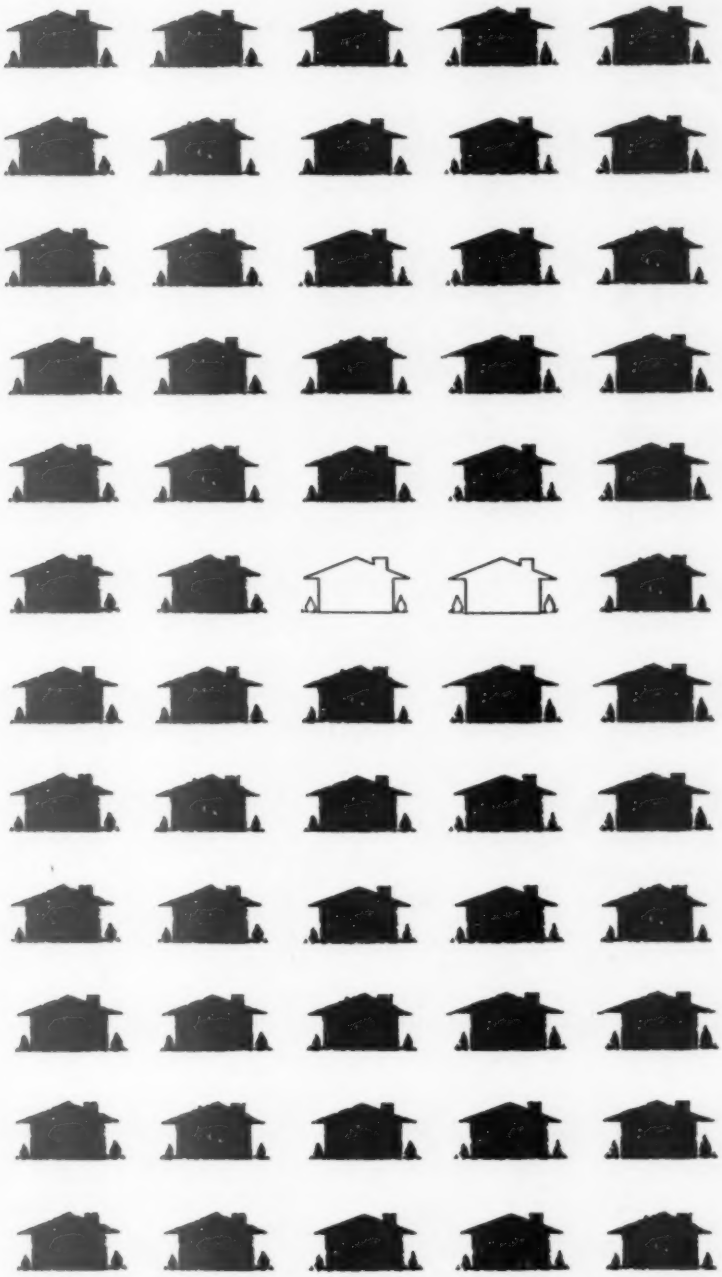
In the announcement to the members, Grady emphasized that his resignation did not result from any feeling of dissatisfaction on his part or the board of directors. Instead, his action was prompted solely as a move in "the direction best suited to my interests and experience in the marketing of oil heat."

Lasser is elected President of Chicago Burner Association

THE CHICAGO Oil Burner Association recently elected officers for 1960. Richard Lassar, Enterprise Heat and Power, is the new president.

Serving with him will be Robert Shake, Arrow Petroleum, vice-president; and Bernard Neiweem, Marquette Coal, treasurer.

(*Please turn to page 96*)



You can replace 98% of the oil burner filters in your territory with just four PUROLATOR elements

With a small inventory of just *four* Purolator filter elements, you're set to handle the replacement needs of 98% of the oil burner filters on the market—old ones, new ones, and most of the odd sizes.

Once you've installed a Purolator you're set for a long time. Purolator elements filter finer (down to 0.0005") and longer (they last a year or more without servicing) than any other filter element on the market. With Purolator, you'll be spared the usual emergency calls to replace nozzles that have failed because of abrasive dirt. And a year or more from now, at replacement time, you'll appreciate the way the Purolator element pops out on a spring to make replacement neat and easy.

Purolator has a cross-reference chart that shows you which Purolator elements will fit which brands of oil burner filters. You can get a free copy of the chart by filling in the coupon and sending it to Purolator Products, Inc., Rahway, New Jersey.

Purolator Products, Inc., Dept. 2578
Rahway, New Jersey

Please send me the Purolator Cross Reference Chart showing the correct Purolator filter element for eight major brands of oil burner filters.

*Name*_____

*Company*_____

*Address*_____

*State*_____ *City*_____ *Zone*_____

Filtration For Every Known Fluid

PUROLATOR
PRODUCTS, INC.
RAHWAY, NEW JERSEY AND TORONTO, ONTARIO, CANADA

"Our Own Research Sold Us on Gulf Solar Heat"

Family of heating specialists ran a Solar Heat test in 1957 and jumped into the fuel oil business

"WE HAVE THE BUSIEST fuel oil business in town," says Charles Zeytoonjian, president of General Oil Burner Company in Jamaica Plain, Massachusetts. "Solar Heat is the big seller here."

"And we've only been in the heating oil business for three years," adds his brother, Edward. The two brothers have been heating specialists since 1930. That's how they got into the fuel oil business.

"Three years ago, Gulf Research asked us to participate in some field tests on a new Solar Heat," Charles continues. "Results were so convincing we couldn't afford not to become Solar Heat dealers. We've been doing great ever since. Our wives and sons are part of the business, too. At the rate we're growing, we'll need more Zeytoonjians soon."

"For years we ran into fuel-caused problems in almost every burner we serviced," reminds Edward. "Today with new *hydrogen-purified* Gulf Solar Heat we rarely see that kind of thing.

"Our customers notice the difference, too."

• • •

The Zeytoonjians know it's Gulf's *hydrogen-purification* process that makes Solar Heat burn *extra* clean. They know, too, what a big advantage it gives them over other fuel oil dealers in their area.

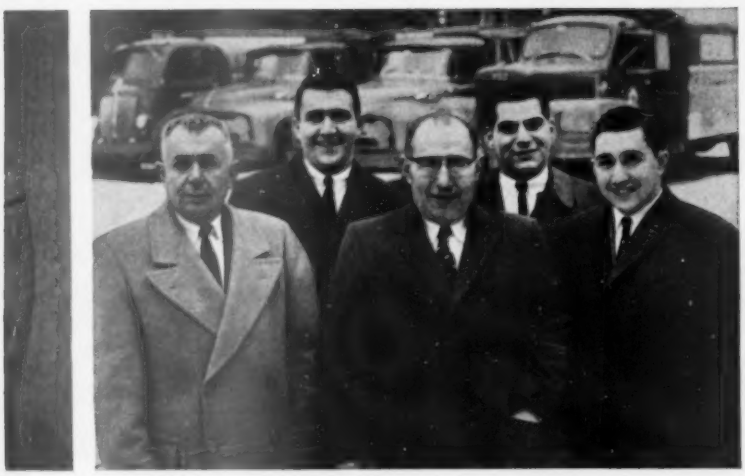
Their profits are bigger because Solar Heat provides clean heat . . . trouble-free operation.

Phone your nearest Gulf office . . . soon! Get the full story on new Gulf Solar Heat. Learn the many exclusive sales and promotional advantages you can enjoy as a Solar Heat brand reseller. *Do it today!*

The older generation started it. Mr. and Mrs. Edward Zeytoonjian and Mr. and Mrs. Charles Zeytoonjian began the family heating business 30 years ago.

The younger Zeytoonjians—Charles' sons, Richard and Fred, and Edward's son, Henry (center), now handle sales, operations and credit, respectively.

Two Smart businessmen, Charles and Edward Zeytoonjian, jumped at the chance to sell Solar Heat when they saw the results of field tests that they conducted for Gulf. They're always planning how to better their business.



All outside work, including servicing and installing burners, is handled by the men in the family. Here they are in front of their fleet of trucks.

Go one better
—Go Gulf

OIL HEAT'S BEST

GULF
SOLAR HEAT®
heating oil

Luxaire®

puts the ORDER in your hand!

...and MONEY in your pocket!

You'll find it easier to land the order, easier to make money — because you get *more of everything* with Luxaire!

Consider the competitive Luxaire qualities in terms of weight. Luxaire Furnaces give you Heavy Gauge Heating Elements throughout the entire line. Compact, well styled Luxaire Cabinets are rigid and solid — die-formed from 21 Gauge Steel.

Realize Luxaire excellence as a matter of available Air Deliveries. Practically every Luxaire Furnace has ample Blower Capacity so that cooling can be added with the standard equipment blower.

Experience superior Luxaire performance. No other major line has a more enviable reputation for trouble-free operation.

Discover Luxaire pricing. It is consistently competitive all along the complete line, eliminating any need to choose between a low price and excellence — for Luxaire gives you both!

Now, see your Luxaire jobber, who stocks your unneeded inventory in his warehouse!

Interior view of Upflow Unit, showing the rugged construction and uncomplicated design.

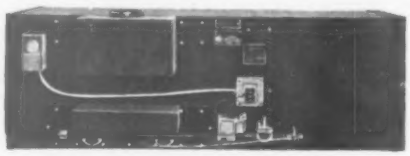
A COMPLETE LINE OF GAS A. C. UNITS

Upflow — Compact, completely assembled and wired units — 75,000 to 200,000 Btu.

Counterflow — Completely assembled and wired — 75,000 to 150,000 Btu.

Horizontal — Low and compact, assembled and wired — 80,000 to 140,000 Btu.

Basement — Compactly packaged, heavily constructed, easily assembled — 105,000 to 260,000 Btu.



Horizontal Gas Furnaces Designed with Add-On Cooling in mind! Low and Slender!

Interior view of Upflow Unit, showing Round Heating Element and Refractory Firebox!

A COMPLETE LINE OF OIL A. C. UNITS

Assembled and Wired — Winter Air Conditioners with refractory Firebox — 78,400 to 112,000 Btu.

Counterflow — Completely and partially assembled — 78,400 to 123,200 Btu.

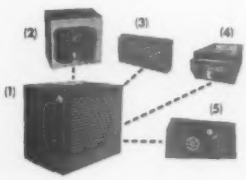
Horizontal — Heating element, blower and motor assembled in casing — 89,600 to 224,000 Btu.

Basement — Heavily constructed, readily assembled — 84,000 to 224,000 Btu.

New! 3 new sizes of Horizontal Furnaces! Low and Slim with increased Air Handling!

Gas Fired Unit Heaters, 5 Models

Gas Conversion Burners



(1) 2, 3, 4, 5 H.P. Air Cooled Condensing Units, (2) Plenum Evaporator, (3) Duct Evaporator, (4) Counterflow Evaporator, (5) Blower-Evaporator Unit.

Year 'Round Combination Units, Air or Water Cooled, Gas or Oil Fired

Winter Air Conditioners Gas Fired or Oil Fired

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Luxaire® HEATING & AIR CONDITIONING UNITS

fueloil & oilheat

The Benefits keep growing

After a Season or Two the fast delivery Systems approach their Potential

by Robert Gray

SOME VERY INTERESTING work has been done in the past few years to reduce the cost of fueloil deliveries. The objective has been two-fold . . . to fortify the distributors' profits in an era of slower growth rate for the industry, and to help keep the cost of oil competitive with other automatic fuels.

The advances down this road have been led almost entirely by the manufacturers of specialized delivery equipment. That is particularly true when we think of the portion of the delivery chore accomplished while the truck is parked at the home or the bulkplant. The actual pumping periods at each place account for no more than a total of ten minutes of each hour under modern conditions.

Thus the characteristics of the truck and driver are also very significant, especially during those other 50 minutes. Trucks built to handle their heavy loads with speed and flexibility are increasingly important, and drivers lucky enough to work under incentive systems are making splendid showings both for the company and for themselves.

This particular story, however, has to do only with the things that happen while the truck is stopped. An inquiry was made to locate some fueloil distributors who had been able to use enough of the new speed-up equipment to feel confident that they had some of the real answers. The point here is that most oil men ease into the program gradually, and until they get their operation completely converted, or perhaps a major zone finished, they can't well compare results of "before and after taking."

One good-sized operation that came to light in our search was Griffith-Consumers Co., Washington, D. C., a marketing subsidiary of The Atlantic Refining Co. After two full seasons since the start, the company now has several zones fully converted to speed operation, and one of them has had two full seasons. The results were not too exciting at the start, but very acceptable at the finish.

In all, the company now has more than half of its light oil trucks equipped with centrifugal pumps running at 90 gpm or better. It has several zones completely equipped with tight fills at the customers' tanks and of course the entire company operation has utilized tank fill signals for years. For this past season the loading point for two zones was blessed with an entire new loading rack to stand up under the stresses of 800 gpm loading operation. The loading spout is rested at an angle on the bottom of the truck tank and a 2100 to 2500 gallon delivery unit is filled in 2.5 to 5 minutes.

The first step in the modernization program was installing tight fill equipment in one large zone. Where it was possible to isolate the effects, the improvement in gallons delivered per hour for week day daytime operation appeared to be from about 440 before any new equipment added to 502 with the tight fills. That was in December 1958, the first real winter month after the new program was started.

The next tally was made at mid-March of 1959 and covered week-day operation of the three coldest months, December 1958 through February 1959; still with only a small part of the total fleet converted. This was the score:

	Over-all Fleet	*Tight fill Territory*
Gallons per hour	460	566
Gallons per del.	164	165
Miles per stop	1.72	1.52
Stops per hour	2.88	3.49

By February, however, the last of the three months, the system was working better through experience and this is what happened:

	Over-all Fleet	*Tight fill Territory*
Gallons per hour	532	619
Gallons per del.	172	171
Miles per stop	1.57	1.48
Stops per hour	3.29	3.67

At that point the manager of the operations department isolated the five trucks that had everything; in other

words, the fast centrifugal pumps, the tight fills and new loading facilities; and for that month of daytime operation came up with 701 gph delivered, 171 gallons per delivery, 1.11 miles per stop and 4.19 stops per hour. It was a well concentrated area as the mileage shows.

The progress goes on. During this past season the entire company average for December was 528 gallons delivered per hour compared with 440 in December 1958. January 1960 was still better with 576 versus 492 last year.

Then there were three new territories modernized for the first time this season. They had neither fast pumps nor tight fills in February 1959 but were completely equipped in February this year. The same drivers were used, with this result:

	February 1959	*February 1960*
Gallons per hour	506	611
Gallons per del.	168	172
Miles per stop	1.68	1.65
Stops per hour	3.11	3.61

That's the real measure of the gains for one year. There would seem to be more coming as the drivers get to understand the system better. Also, there was another big gain . . . fewer trucks were needed this season.

In a large company like Griffith-Consumers there is no pat answer to any or all of the questions raised in such a study. Other factors affect the scoring, such as a new pickup point for loading, which both cuts the miles-per-stop average and raises the stops per hour. This did happen to a couple of important territories and it had a favorable effect on the last set of figures shown. We noticed though that in the original test zone, they were getting 658 gph in January 1960 and more stops per hour. And we notice a tendency for an operations manager like Jim Patterson to concentrate on improvement of each individual zone, and less often report the details of the over-all functioning.

In the visit with both Patterson and Lloyd Wilson, president of the company, a lot of emphasis was placed on the employees' part in making the new methods successful. They need to be brought into management's confidence all along the line, so they'll know the objectives.

For example, high speed pumping can be a rather anxious experience until the driver learns that there's enough safety equipment to prevent his breaking something, either the truck equipment or the basement tank. There is a tendency among new drivers to start and stop very slowly, and a few drivers will almost never open all the way up for fear of a spill. Actually, there are flow controls for the start and stop position on the pumping today so there is no need for a shock at either end. The proper systems start and stop slowly, run full speed in the middle.

Then a driver may feel that he's having to work harder, but that can be answered with a good incentive or profit-sharing system and he soon becomes a believer. In fact, the Griffith-Consumers drivers brought up the subject of using 1½" hose and asked the company to buy it. Naturally it is heavier than the customary 1¼" size but the men felt they'd get more out-

Griffith-Consumers officials who discussed the new distribution methods with the editor—from the left James Patterson, operations manager; L. B. VanDercook, vice president and treasurer; and (right) Lloyd Wilson, Jr., president.

put and less internal pressures when pumping at 90 gpm speed.

The company has a lot of employees —400 at the peak season. It is both the largest oil and coal dealer in the District, has the largest service organization. So any incentive plan for a department must be pretty well designed both to get improvement and to pay the men well for good work.

The plan here is originally based on the historic record for each territory . . . mileage, stops and deliveries. A man's pay is based on an efficiency rating which takes those three items into account, plus an allowance for C.O.D. stops and extra points for each week that has no accidents or spills. The historic record has established the "par for the course" in each delivery zone.

There are five pay grades on an hourly basis, all tied to efficiency. A new driver has a starting rate until he reaches 85%, then gets a raise. There's a bracket from 85-90, from 90-95 and from 95-100%. In a typical winter week just over half of the drivers were rated at 100%. The ratings are calculated and paid weekly.

Then there's a worthwhile incentive for some of them paid at the end of the season. Any day the driver exceeds the quota number of drops, he is credited so much for the first, so much for the second and third, etc. Also he gets a fixed amount for each day that he exceeds a pre-set gallons per hour quota.

The incentive and bonus system is being studied constantly. Once each year it is re-established to make it as near perfect as possible. There is only one objective, to pay the men well for superior performance.

In addition, the company enjoys quite a few other activities and benefits with its employees. There's a baseball and bowling league with weekly interdepartmental games during the season; picnics, birthday cakes, gift watches for Quarter Century Club members, three general social events per year, and a turkey for all at Christmas. Also Griffith-Consumers has its own monthly employee periodical, the "Fuelish News," fine sick leave, group hospitalization, surgical benefit, retirement and group life insurance plans. Sounds like nice work.

Getting back to the fast delivery methods, there was a consensus between Wilson, Patterson and L. B. VanDercook, company vice-president and treasurer, that the benefits are cumulative in two ways. First, it takes the complete system to realize the big advantages; an item or two here or there can't mean much. Griffith stresses the system approach even to the point in recent years of mechanizing accounting functions in the degree-day operation to expedite record keeping and dispatching. Second, the men who operate the program are the greatest single factor in its success. And once they are enthusiastic about it they will continue to show improvement as their skills, and their rewards, increase.

PERFORMANCE RECORD

DOMESTIC — WEEK ENDING JANUARY 5, 1960

DRIVER	NO OF DAYS WORK	MILES RUN	LOST TK. TIME BKDN.	LOST TK. TIME OTHER	GALLONS DELIVERED	DEL.	NON DEL	COD	HOURS WORKED	STP. PER HR.	MI. PER STP.	GAL. PER DEL.	GAL. PER HR.	EFF. %	NET EFF.	BONUS
A	4	166	.42	1.92	33601	199	6	10	47.75	4.29	.81	169	704	100		17.30
B	4	287	-	-	27872	173	-	1	43.75	3.95	1.66	161	637	100		9.00
C	4	435	1.00	1.51	21049	135	7	-	47.25	3.01	3.06	156	445	100		3.30
D	4	389	-	.75	21907	128	1	4	50.00	2.58	3.02	171	438	88		.70
E	3	148	.50	1.08	15749	108	6	12	35.50	3.21	1.30	146	444	93		2.00
F	4	315	.75	3.16	25037	149	3	4	50.75	3.00	2.07	168	493	100		8.70
G	4	166	1.58	.08	25766	176	3	17	42.50	4.21	.93	146	606	100		12.10
H	4	160	—	1.33	22441	133	8	15	45.50	3.10	1.13	169	493	86	80	—
I	4	324	-	-	23387	138	-	5	48.25	2.86	2.35	169	485	87		.50
J	4	231	2.75	4.67	31041	184	1	6	53.50	3.46	1.25	167	580	100		13.30
K	4	344	—	2.00	35666	204	3	11	53.75	3.85	1.90	175	664	100		19.40
L	4	315	.50	2.08	35015	154	2	-	47.00	3.32	2.02	227	745	100		6.40
M	4	471	.75	2.92	28263	170	1	9	48.25	3.54	2.75	166	586	100		12.80
N	4	185	.75	3.80	21374	125	12	7	49.25	2.78	1.35	171	434	89		1.70
O	4	177	-	1.67	29605	182	6	8	45.50	4.13	.94	163	651	100		12.50

The man in the cab no longer performs a bookkeeping function—his job is to deliver the oil. Wendel McMurray, (left) and Albert Woosnam, company officers, like it that way.

Delivery Men are not invoice Clerks

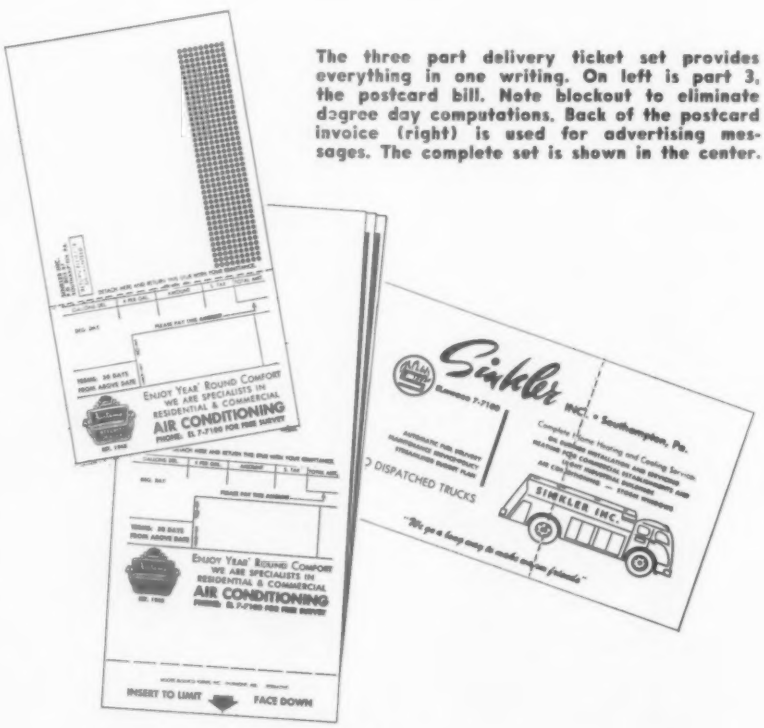
Description of a simple Routine for office Calculating, mailing of Tickets

by Ernst Harpur

Editor's Note — The question of having the driver compute and leave delivery tickets at the house, versus having calculation and mailing done at the office, is of special interest just now. The Bureau of Weights and Measures, Washington, which a year ago advised state legislatures against the office practice, is taking another look with the good possibility of a probable revision of their views as this is being written.

The system described here is not a novelty. Several good fueloil distributors have used it for years. But the vast majority in number of companies still has the driver figure the ticket and leave it. Harpur has described and illustrated the office-calculation routine in a particularly concise and intelligible manner. When the editor, in turn, discussed the story with Al Woosnam of Southampton, Pa., the "hero in the piece," he learned a few additional slants about the activity described. With the new routine one girl in the office handles the whole procedure with 4,900 customers in five hours a day. Woosnam believes that in another season he can replace the three-part ticket described in the story with a two-part ticket, because he has found very little reason for the third ticket that goes into the "date file."

WHEN A COMPANY first begins to realize that some of its methods have been outmoded, something should be done soon to bring it up to the level of the best new practices. A system, such as paperwork procedure, that seemed foolproof years ago is now springing leaks.



The three part delivery ticket set provides everything in one writing. On left is part 3, the postcard bill. Note blockout to eliminate degree day computations. Back of the postcard invoice (right) is used for advertising messages. The complete set is shown in the center.

Sinkler, Inc., of Southampton, Pa. and its principal officials, Albert W. Woosnam, president, and Wendel S. McMurray, secretary-treasurer, found themselves confronted with this problem. Their delivery routine had involved addressing a delivery ticket, attaching it to the customer's degree-day card, sending both forms out with the driver. He computed each delivery at the site and left a copy of the ticket at the house to serve as the invoice.

As Sinkler's business grew this was obviously becoming less than desirable. The delivery information and the new degree-day figure was entered by hand to the card and filed. The calculations on the ticket, made by the driver at the house, always had to be checked for accuracy. If an error in arithmetic was found, the customer was rebilled, an admission of inefficiency at best. Drivers spent far too much of their time on clerical work.

After a thorough analysis of the system they finally decided on a routine which called for an investment in three machines which would eliminate all hand posting, calculating and invoice preparation.

First address plates were made for each customer and attached this to his corresponding degree-day card. As the customer's delivery-date comes around, based on elapsed degree-days, the plate is used to address a three-part delivery ticket (see illustration) which is given to the driver. The degree-day card and plate stay in the dispatcher's file. Nothing has to be written; it takes only a few seconds to run the plate onto the ticket.

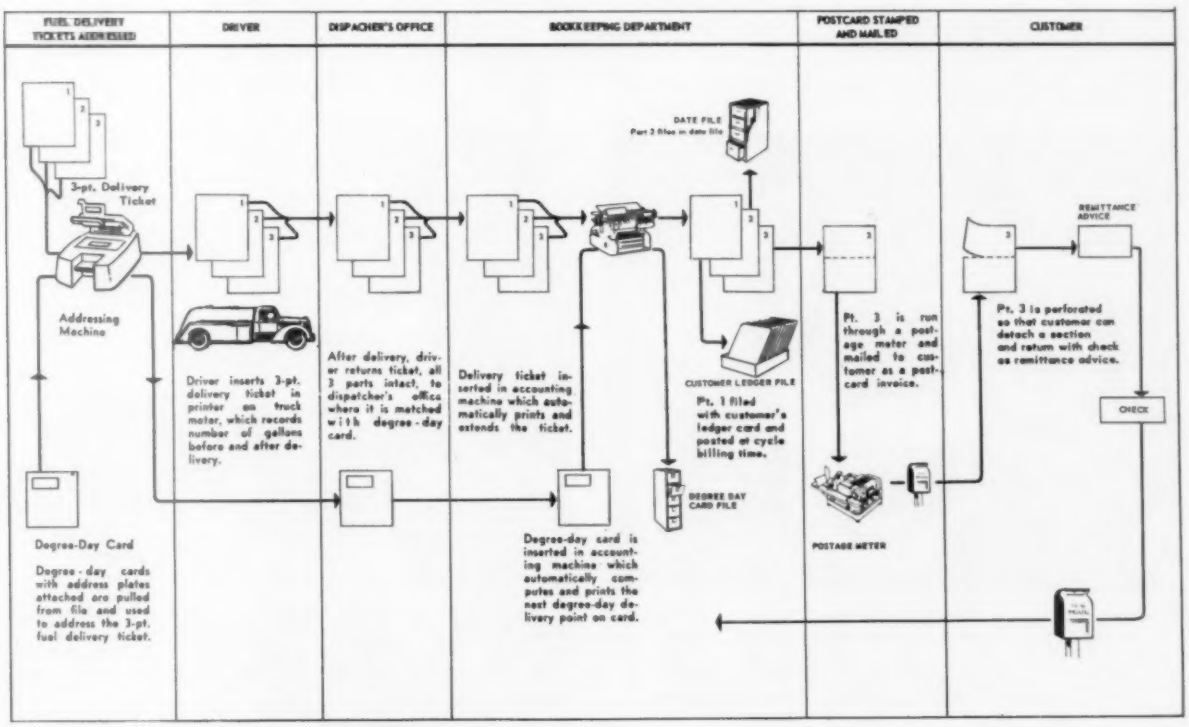
The driver inserts the three-part ticket into the printing meter as he delivers, and all three parts get the before-and-after reading from the meter, the difference being the net delivery in gallons. The delivery completed, the driver removes the triple ticket and goes on to the next stop. He doesn't spend a moment on computation, nor does he go to the house, where he might be delayed in a friendly conversation.

All the necessary figuring is done in the office using a modern automatic accounting machine. It simultaneously processes both the degree-day card and the delivery ticket. It extends the gallons delivered, the price, sales tax if any, the net amount, the next scheduled degree-day point for delivery.

The third portion of the triple ticket is printed on heavy postcard stock. It is now used without further posting or addressing, as the bill for the customer. The postcard is then run through a postage meter at postcard rate, rather than envelope rate, at a considerable saving. Customers don't have any objection to postcard billing; they have been getting cards for years from the various utilities in most markets.

The system is efficient; mistakes are extremely rare. A modern fueloil truck with its heavy investment and operating expense costs about ten cents a minute, whatever it may be doing. If a driver uses four minutes average to calculate and leave a ticket at the house, including occasional visits, that's forty cents a drop for elapsed time. With Woosnam's 4,900 customers and seven deliveries a year on the average, that's nearly fourteen thousand dollars a year not being spent under the new system, against which you have the part time girl, the machines and the postage.

The practice of office calculation and mailing of bills is growing so fast that in five years it should become almost universal except in the occasional state that may require billing on the spot.


FUEL DELIVERY TICKETS ADDRESSED
DRIVER
DISPATCHER'S OFFICE
BOOKKEEPING DEPARTMENT
POSTCARD STAMPED AND MAILED
CUSTOMER
3-pt. Delivery Ticket
Addressing Machine
Degree-Day Card
Degree-day cards with address plates attached are pulled from file and used to address the 3-pt. fuel delivery ticket.
Driver inserts 3-pt. delivery ticket in printer on truck meter, which records number of gallons before and after delivery.
After delivery, driver returns ticket, all 3 parts intact, to dispatcher's office where it is matched with degree-day card.
DATE FILE
Delivery ticket inserted in accounting machine which automatically prints and extends the ticket.
Degree-day card is inserted in accounting machine which automatically computes and prints the next degree-day delivery point on card.
CUSTOMER LEDGER FILE
Pt. 1 filed with customer's ledger card and posted at cycle billing time.
DEGREE DAY CARD FILE
Pt. 3 is run through a postage meter and mailed to customer as a postcard invoice.
POSTAGE METER
REMITTANCE ADVICE
Pt. 3 is perforated so that customer can detach a section and return with check as remittance advice.
CHECK

Blue flame Oilburner

Playing things by Ear, Inventor tries to hit Bullseye of clean, silent Combustion

WORKING in a down-to-earth, entirely practical fashion at plumbing, heating, and oilburner servicing 15 to 20 years ago, Andrew Palko became dissatisfied with the amount of soot he had to clean out of his customers' parlor stoves and other appliances fired by pot-type oilburners of certain kinds.

This was all wrong, Palko reasoned. Oil could be burned better. He thought that he might be able to develop an improved parlor-stove oilburner which would produce a flame 100% clean . . . a flame 100% free of soot. He decided to try, starting some 15 years ago.

Either correctly or wrongly, from the start Andrew Palko placed all his bets on the premise that an oil flame in a space heater should burn 100% blue; his entire premise was that the flame should not have red or yellow in it, for he associated these flame colors with the production of the soot.

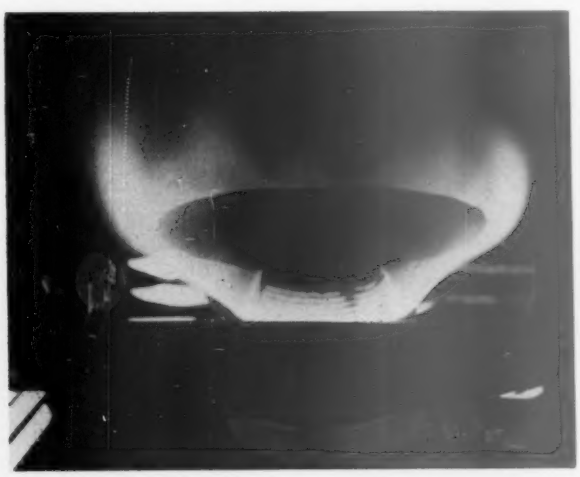
His worship of the 100% blue flame related to his observations made adjusting the burners of gas cookstoves. When adjusted for 100% blue flames, and only then, did these burners keep clean the undersides of pots and pans.

Now, after 15 years of single-handed effort in the basements of several homes he has occupied, this rugged individualist inventor finds that he has achieved the 100% blue flame that produces no soot. He is ready to demonstrate his oilburner to representatives of equipment manufacturers and oil companies. At his request, his oilburner was observed in operation by John W. Schulz, technical editor of FUELOIL & OIL HEAT.

Andrew Palko, the inventor, demonstrates his burner in the basement of his home in Nanuet, N. Y. (in Rockland County, and about 45 minutes by automobile from George Washington Bridge, Manhattan). The burner fires the Coleman Model M511 oilburning space heater. Firing rate is 0.25 gph, one quart per hour, a good fire size for small oil-fired water heaters performing comparably to small gas fired water heaters. The inventor says the combustion principles of his oilburner seem suitable for burners of capacity up to 1.5 gph . . . enough capacity for heating homes of greater than average size.

Using No. 1 fueloil, the Palko oilburner does produce a flame 100% blue. Much of the development work was done using the light, No. 1 fueloil. Observed using No. 2 fueloil, the burner appears to give a flame predominantly blue, but on a highly critical basis not literally 100% blue. The flame makes not a sound.

For a start-up of the burner, an 800-watt 110-volt resistance heater is first turned on for four minutes to heat a fueloil vaporizing chamber.



If this picture were in color, it would show an oil flame 100% blue . . . not the slightest trace of red, yellow, or white in it. Burning here is No. 1 fueloil, at the rate of 0.25 gph. At the left of the photograph, slightly below center, is a 25c piece to give an idea of equipment size.

Andrew Palko, inventor, holds the assembly that includes the vaporizing chamber of his burner. At the upper right is the 3¼" diameter disc assembly used for 0.25 gph burning rate; lower assembly is disc set for a higher gph rate.

During this four-minute warm-up time, no fueloil flows to this chamber, and the forced-draft blower of the burner is idle.

Next, an automatic oil valve opens, admitting oil to the vaporizing chamber, and the forced-draft blower starts. The electric heating element ignites the vaporized oil. All of the air from the blower (which, the inventor says, is all the air used for combustion of the oil) goes into the vaporizing chamber and is thoroughly mixed with the vapor being produced there by boiling the entering fueloil. The resultant, hot mixture of air for combustion, and vaporized fueloil, can leave the vaporizing chamber only by flowing upwards, then leaving the burner through openings between metal discs.

An accompanying flame photograph shows how the hot mixture of combustion-air and vaporized fueloil starts burning in the spaces between the metal discs. Starting there, the combustion continues, forming a soft, gaseous flame of controlled shape. Above the disc assembly is a flame spreader, visible in the photograph.

Another photograph shows the inventor holding an assembly that includes the vaporizing chamber . . . and also shows two assemblies of discs. The smaller disc assembly shown is used in the burner sized for the 0.25 gph firing rate. It consists of ten, steel discs bolted together; largest disc in the assembly is about 3¼" diameter, then the discs are progressively slightly smaller; spaces between the discs are about 3/32" (the flame starts burning in these spaces). So that it flows uniformly out of all the spaces, the mixture of combustion-air and vaporized oil travels upwards through a center passage in the disc assembly, which passage extends to the top of the assembly.

In this experimental set-up, a small fueloil tank is located at floor level, at the left of the Coleman space heater. An automatic wall-pump, halfway up the left side of the heater, provides oil at a constant level in a reservoir. From this reservoir, the oil flows by gravity to the oilburner, through a solenoid oil valve that's closed except when the flame should be burning. In this arrangement, an overflow line runs from the side of the vaporizing chamber back to the fueloil tank. In case of ignition failure, excess oil would flow through this line from the vaporizing chamber back to the oil tank.

High Efficiency

High combustion efficiency is a boast of the inventor, on the basis that all of the air from the burner's blower first is directed into the vaporizing chamber and is thoroughly mixed with the vaporized fueloil. Next, air can escape from the vaporizing chamber only by flowing through the spaces between the discs, which spaces are filled with fiercely burning, but silent, blue flame. Finally, any air emerging from the spaces between the discs must pass through several inches of the blue flame which surrounds the disc assembly.

With every cubic inch of blower air thus sent through the flame itself, as the final combustion processing, the inventor feels, almost every molecule of oxygen in the combustion air is put to use—losses related to excess air are minimized.

The ultimate in clean burning of fueloil was the inventor's aim from the start, and he feels he has accomplished this. With his burner firing a water heater, or a house heating furnace or boiler, he indicates, there should never be a need for flue cleaning. His aim was to have the burner form no soot what-so-ever.

Asked about formation of hard carbon on the vaporizing surfaces within the vaporizing chamber (where raising the temperature of oil in contact with metal changes the oil from a liquid to a gas by boiling it), the inventor replies that, in 15 years of experience with such burners, never has he seen any hard carbon on the vaporizing surfaces.

Advantages of this type burner may include easy, inexpensive manufacture of the burner itself; its only moving parts are in its forced-draft blower; controls can be simple, can be those of a usual, gravity-feed burner of the vaporizing type; its ignition system can be inexpensive; pressurized operation, use of positive pressure in the combustion space (developed by the forced-draft blower), can eliminate any need for a usual chimney and can permit venting of products of combustion through a duct of about 3" size, run horizontally or even downhill after leaving a boiler or furnace smokepipe connection.

What of the 'Soaring Sixties?'

Individuals discuss the Outlook for Fueloil in the new Decade

Editor's Note: An entire recent issue of the Coastal Oil Way *was devoted to the subject: "What's Ahead for Fueloil in the 1960's?" A number of industry leaders expressed their views on the outlook as they see it. With the cooperation of the Coastal Oil Company, Newark, N. J., highlights, including some of the quotations, are condensed here:*

FOR THE FIRST time in its history, fueloil ran into real competition in the 1950's. Now what lies ahead in the decade of the 60's? Is the outlook good or bad?

One answer was supplied by L. F. McCollum, president of Continental Oil Company, who wrote:

"A paradox in oilheating is the fact that, although many heating oil retailers would say they never had so many difficulties as in the 1950's, jobber and distributor profits on heating oil have climbed to the highest levels on recent record. Difficulties may be greater, but so are the returns.

"Heating oil has no problems that are not normal in our free, competitive economy. The future of heating oil looks very good."

Energy Growth

Predicting that, because of the so-called "population explosion," the nation will need more of all forms of energy, including atoms, water power, coal, natural gas and fueloil, Charles J. Guzzo, senior vice-president, Gulf Oil Company, described the future of the fueloil dealer as follows:

"An aggressive re-seller, who has been accustomed to much larger gains in the years right after World War II, must look for differential growth in order to be fully satisfied. This is another way of saying that a distributor engaged in this business must seek to outdo his competitors with more vigor than he has found necessary in the past."

On the question of how soon new types of oilburning equipment will be actually ready for marketing, T. A. Aldridge, American Oil Company, pointed out:

"Research on burners is being carried on at an accelerated pace. If we're thinking of revisions, we haven't long to wait. But the really revolutionary equipment could hardly be sold short of three years."

New horizons for oil uses other than heating were forecast. There was a general agreement that the expanded use of fueloil in the immediate future is likely to be tied up closely to the continued development of the oil-fired water heater, oil-fired incinerator and oil-fired airconditioner. Likewise, agricultural uses of oilheating for curing and drying farm products were cited.

Robert Gray, editor, FUELOIL & OIL HEAT foresees that new uses may increase fueloil demand by an average of 1% each year; that is, by about 10% during the decade.

More Efficiency

For faster deliveries, fuel demand computers, tight-fill systems, vent signals, faster pumps and larger truck capacities all will have greatly expanded use, according to L. S. Marshman, wholesale manager, Mobil Oil Company. He believes that increased efficiency in product handling and delivery methods is absolutely essential if rising delivery costs are to be halted and brought down. He also called attention to the potential savings of 1,000-gallon storage tanks replacing 275 and 550-gallon tanks.

Six kinds of improvements which he hopes and thinks will take place in the near future were listed by P. T. Lomenzo, general manager of the Fuel Oil Division of The Atlantic Refining Company, as follows:

1. Greater use of trucks with increased pumping speeds.

2. Wider use of tight-fill connections in many more markets.

3. Increased use of tank trucks with capacities of 3-4,000 gallons, and with meters in cabs.

4. Greater use of automatic delivery methods by more dealers.

5. More pick-up points especially in large built-up areas to help step up the number of deliveries per day.

6. More widespread use of automatic machine equipment for pricing, and the processing of delivery tickets in the office rather than by the driver.

Burner service without visible extra cost seems destined to grow during the next several years. Referring to so-called "free" burner service wherein the distributor's costs are actually covered in an increased price for the fuel, one marketer, however, warned:

"Although this appears to have merit as a merchandising idea, a great danger exists in cheapening the overall burner service and parts replacement plan that is being advocated by those who render complete service at a stimulated price."

Nevertheless, Robert Crane, an industry-minded New Jersey retailer, believes that "All-inclusive service policies of the future will at least have some portion of the cost absorbed in the oil price."

Paralleling his opinion was another statement:

Service Responsibilities

"One thing is sure, gas and electric heating require considerable less service. So the oil companies are going to have to step up their responsibilities and see that their customers get perfect service at the lowest possible cost."

While natural gas was expected to continue as fueloil's major competitor for the present in most markets, a number of industry leaders see electric heating as the more serious threat over the long haul. An encouraging note in the existing competitive gas situation was a reversal last year of a trend in oilburner installations with a 12% gain during 1959. Within perhaps 10 years, it was anticipated that the gas competitive curve would level off as gas rates increase faster than oil prices, plus the diversion of gas for greater industrial use, specifically petro-chemicals.

On the other hand, the spread of summer cooling in many areas has forced the electric utilities to add generating capacity. In connection with the campaign of the utilities to offset the summer demand with electric heating for winter weather, a warning was sounded that fueloil men should not be complacent because it is unlikely that electricity can match fueloil on heating costs in most markets. The danger is the powerful promotion of electric heating, which is being merchandised in an all-electric home package.

"Therefore, all the more need for our industry to develop the full uses of fueloil, not only for heating, but possibly other purposes within the home," declared one prominent fueloil marketer.

On matter of the future importance of independent jobbers or dealers vs. major petroleum companies in future retailing, even the major company representatives repeatedly expressed the belief that the independent would continue to dominate the scene because of the personal character of the fueloil business. At the same time, they cautioned that laxity of independents in serving the public would invite a greater percentage of direct retail sales by major companies.

The view of B. S. Corsgreen, president of Petroleum Terminals, Chicago, was:

"Expanding direct major company operations will not threaten too seriously those independents who conform their business to the highest standards of personal service while employing the most modern distributing methods available to keep costs in line with sales net-backs."

General confidence in fueloil's future has been heightened by the prospect that oilheating soon will have the backing of a new single strong national organization, comparable to the American Gas Association, Edison Electric Institute and The Asphalt Institute. Wiley Butler, president of Coastal Oil Company, who first suggested such an industry-wide organization to the API Fueloil Committee said:

"It can help immeasurably to benefit both the industry and American homeowners. I foresee the opportunity for broader research, improved education within the industry, better merchandising and oil uses which will be more satisfying to customers. The members of the National Fueloil Council and the Oil-Heat Institute who have planned and are guiding the formation of this new organization deserve the thanks of all the industry."

Mr. Butler was joined by other oil heat leaders in urging the entire industry to support the united effort so that the tremendous potential for accomplishment can become reality.

Comfort is our Business

Properly designed perimeter-type forced-air Systems provide outstanding Comfort

by Carleton R. Machia*

WEBSTER describes "comfort" as "a state of quiet enjoyment." We in the heating and airconditioning field have made great strides in making this definition a reality rather than a dream.

The main objective of a heating and airconditioning engineer is comfort, not just providing heating in winter and cooling in summer.

When I'm a guest in friends' homes and they learn of my occupation, often they have heating problems, which they try to place in my hands. Whether they heat by hot water, warm air, steam or electricity, their complaints boil down to one sentence, "We are not comfortable."

"Comfort" is a small word, but it covers many aspects in the field of heating and airconditioning, including temperature, humidity, and cleanliness and distribution of room air. This article concentrates on the forced air system for house heating, the type of heating system which is outstanding in being able to provide comfort.

The first step in designing a heating system is to figure the heat loss of each room in the house. Thus temperature enters the picture.

Needed to arrive at true comfort are two more niceties. First, room air temperatures should not vary more than two degrees, shown by a thermometer at the 30" level. Second, temperature variations between rooms should not be more than two degrees.

The way to gain these two niceties is to adjust the system for CAC (continuous air circulation), which means many hours of operation for the furnace's circulating blower on a typical winter day.

The following readings compare intermittent blower operation with continuous blower operation. Intermittent operation gave a temperature difference of 2.4°F. between the 30" level of a room and the ceiling level; but continuous operation gave a difference of only 1.7°F.

Intermittent operation gave a temperature difference of 5.0°F. from the room's 30" level to the floor level, but continuous operation gave a 4.0°F. difference.

Floor-to-ceiling temperature difference was 7.4°F. with intermittent blower operation, but was only 5.7°F. with continuous operation.

Extremely important is proper on-off cycling of the oilburner, gained by the action of the heat anticipator in a modern room thermostat. Burner "on" periods of approximately four minutes should be strived for. Such short "on" periods keep the furnace's plenum temperature low and fairly constant during mildly cold weather, thus keeping the furnace's circulating blower running continuously. Putting to use these ideas has corrected many problem jobs.

*Chief Engineer, Swett Brothers, Inc., Springfield, Mass.

Bear in mind that the higher the temperature of the air leaving the furnace, the higher is the heat loss of the supply ducts. The hotter the supply ducts, the greater is their loss of heat to the air surrounding them in the basement.

As an example of how giving attention to proper oilburner on-off cycling helps solve heating problems, consider the home represented by the accompanying drawing. Notice that the thermostat is located in the living room. The oil-fired furnace is beneath this room. The drawing shows that the living room has four supply registers and two returns. This is good practice in perimeter heating, because of the three exposed walls.

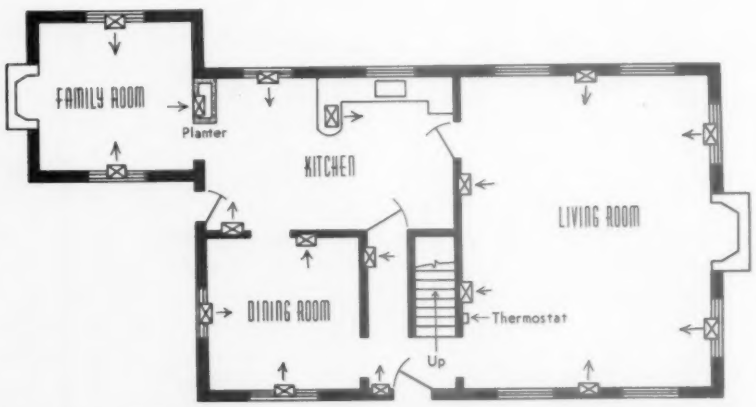
The heating trouble in this house started when the owner added the family room, which is on the north side of the house, and moved the television set, hi-fi set, etc. into this room. The family started living in this room, and seldom used the living room.

You can see what happened. The thermostat would call for heat and quickly warm the living room, and off would go the burner. The family room, on the north side, would warm up until the circulating blower stopped, and then would immediately start cooling down; while the living room, on the south side, would hold its heat and keep the burner off.

As his first effort, the serviceman moved the thermostat into the family room, which helped this room but aggravated the living room condition.

Then came the idea of the oilburner "on" period which, checked, was found to be 20 to 25 minutes. He cut this to four minutes, and adjusted the dampers in the feeder ducts. The reduced plenum temperature and adjusted dampers kept the living room from overheating, while they maintained the same temperature in the family room. Another accomplishment was a reduction in the temperature difference of the supply ducts and the basement air surrounding them. The serviceman went one step further; he insulated the trunk duct, leaving the furnace, for a distance of 25 feet. By doing this, he kept the supply-duct air at nearly its initial temperature until it reached the halfway point in the house.

The second phase of comfort is humidity. Here, again, the forced air heating system is adaptable. It is true that dry air will tend to dry out membranes in the nose and throat, and somewhat reduce the resistance to colds. Medical opinion is not entirely in accord on this point, thus comfort seems to offer the most tangible standard of measurement.



First floor of a two-story residence. The addition of the family room, which is on the north side of the house, created the problem described in the article. Each rectangle criss-crossed by two diagonal lines, in the drawing, represents a supply duct or return duct. The arrows indicate which are supply ducts, and which are return ducts. These rectangles showing the ducts are oversize in this drawing, so that they'll show up clearly in this illustration. The ducts shown here protruding from walls are actually entirely within the wall. All supply registers and return grills are low sidewall type. Below the planter in the new, family room, for example, is a return grill located vertically near floor level. One of the three supply registers in the kitchen is mounted vertically in a panel of a built-in cabinet near the sink. The living room has four low side-wall supply registers, and two similarly located return grills.

Too often the problem of heating and humidity has been left solely to the heating man. Not enough effort has been made by the heating man to acquaint the builder with this problem. In a structure properly constructed, the problems of heating and humidity are quite simple. Tight walls, insulation, weather-stripping, and storm sash, all have a significant bearing on the all-important comfort, as well as on the economical operation of the heating equipment.

Circulating Air

Advocates of some mediums of heating, such as electric coils in ceilings or baseboards, stress full insulation. They call it 6-4-2, and it makes for a very tight house, which in itself is excellent for forced warm air heating. But what happens when you are not circulating air or introducing fresh air into a tight house? The air becomes dry and stale; dust can collect around certain kinds of coils and keep building up, ultimately causing odors. When excessive moisture is added to the rooms by such things as showers, cooking, etc., it has no place to go, so it condenses and runs down walls and windows. These problems are eliminated in a good forced warm air system.

Water vapor can be added to the air of a home heated by a forced warm air system. Any of a number of different types of humidifiers can be used from the small evaporator type to the large power type. Control of humidity can be automatic.

Very dry air is conducive to the generation of static electricity, which you can notice as sparks discharged when you touch grounded metal, after you walk across a rug. This is bad enough, but some experts feel that static electricity on the surface of dust particles tends to keep the particles moving. Humidity, in relation to furniture and wood finishes, is important. Dry air will absorb moisture from glue and fabrics, and thus tends to depreciate furniture, rugs, and wood trim in the home. The table shows how relative humidity affects moisture in wood.

The recommended moisture content of wood is between 5% and 8%,

which the table below shows corresponds to relative humidity of 25% to 40%.

% Relative Humidity	% Moisture in Wood
0%	0.0%
20	4.5
40	7.7
60	11.3
80	16.9
100%	32.4%

The relative humidity required for human comfort depends on room air temperature. The following table gives some idea of the ratios.

% Relative Humidity	Dry-Bulb Temperature Degrees F.
20%	73.0°
30	72.0
40	71.0
50	70.0
60	69.0
70%	68.0°

The third step towards comfort, which we must recognize, has to do with cleanliness. Dust particles of any type can produce irritation of the nose and throat, if present in large amounts. A certain part of the dissemination of disease in confined spaces may be due to organisms floating in the air. It is therefore usually desirable to reduce the concentration of impurities by air cleaning methods. As you can see by the words "air cleaning," the forced air system is ideal for this phase.

Air Cleansers

Cleaning devices for atmospheric air are classified as viscous coated media, dry air filters, and electronic types. The degree of air cleaning desired influences the choice of the air cleaning device.

A viscous coated filter is treated with a viscous substance such as oil or grease to cause it to retain dust particles which come in contact with it.

Dry air filters are made of fabric-like materials such as felt, cotton, or cellulose, all of which have high lint-holding capacity, but less efficiency than the viscous type.

The most effective media is the electronic cleaner, which is used in a variety of installations serving from residences to largest factories. Its principle lies in introducing a charge of electricity against the entering dust particles.

Not only does the warm air system incorporate the air cleaning device for the removal of dust particles, but such a system is also easily adapted to air disinfectant, such as the Glycoater, which speads a disinfectant into the air stream to kill harmful bacteria.

With the engineer incorporating these three phases, which have been described, we are well on our way to a "comfort" installation. The last phase the engineer must include is air distribution.

The condition of comfort in a structure is influenced by the type and location of supply and return grills.

Supply, Return Grills

Two methods of locating supply and return grills are in common use today. The use of one method produces the perimeter system, whereas the use of the other method produces the so-called conventional system. In a perimeter system, all the supply registers are around the outside walls, near the causes of the highest heat losses. In a conventional system, the supply registers are on inside walls, and the returns are near the outside walls . . . nearest the greatest exposure.

For its ability to produce sheer "comfort," you cannot outdo the perimeter type of air distribution.

In designing a perimeter system, size the oil-fired warm air furnace by Btu's, but locate your supply and return grills by distribution. Study the drawing which illustrates this article. Notice, for example, that the living room shown in this drawing has four supply registers. Only two such registers are required to maintain Btu requirements, but in a room of this kind four supply registers must be installed to achieve good distribution.

One large heating company prices its outlets on a distribution basis, charging full price for outlets needed to cover Btu losses, but half price for outlets needed for proper distribution. Thus, this company offers a true perimeter job without putting the price out of line.

Following are a few reasons that tend to substantiate the statement that a forced-air system delivers outstanding comfort:

a. Circulation of air is possible.

b. Such a system is controlled so as to give uniform temperature distribution.

c. Humidity control is readily attainable.

d. The air may be cleaned, and the danger of harmful bacteria may be reduced.

e. The same distribution system may be used for summer cooling.

f. The use of a circulating blower to distribute the air means flexibility of outlet locations.

g. Fresh air may be positively introduced and controlled.

h. Excellent forced air heating systems provide unsurpassable fuel economy . . . and fuel bills which are literally minimum.

We have covered the four basic phases of a "true comfort" installation. If these four phases are used in the engineering of an installation, you will have only praise from the customer. And a satisfied customer is your best salesman!

There is one item I must mention here which, if not included in every installation, will undo all the proper engineering. That is: Service to the customer!

Service Needs

No matter how well engineered and installed a "comfort" installation may be, a customer will not be satisfied if he does not receive the service to which he is entitled. From the moment contact is made, this means: Prompt and accurate engineering; Rapid and neat delivery and installation; Quick reply to any service call, by a qualified serviceman; The necessary manpower and parts to make this quick reply.

Under proper conditions, a company can be diversified to the degree that it handles "comfort" not only in heating . . . but airconditioning, ventilating, insulation, storm windows and doors, awnings and fueloil, to name a few of the allied lines pertaining to the field of "comfort." Such a company can truthfully tell its customers, "Your comfort is our business!"

Heating Firms buy oil Company, pool service Crews, sell more Burners

Quartet in close Harmony

by V. M. Douglas

SITUATIONS in reverse of normal procedure constitute news. Probably the most widely publicized example is "man bites dog." Other notable cases would be "wrong way Corrigan" and the famous California football player who ran the wrong way to make a touchdown for the opponents.

It is a matter of record that for many years, FUELOIL & OIL HEAT has advocated that all domestic fuel-oil dealers should have a mechanical department for the sale and service of oilburners. As a policy it has seemed to make sense, and one after another, many holdouts have seen the light, taken on burners and service, and admitted, whether they liked it or not, they should have done it sooner.

David D. Letts, Winkler Heating & Airconditioning Co., Lansing, Mich., has one regret about Guardian Oil Co. He's sorry that he and his associates didn't get together sooner to combine fueloil profits with their income from burner sales.

It was seven or eight years ago when six oilburner distributors in Lansing, Michigan, decided their profit on an oilburner installation was not enough. It did not seem quite right that they should compete with each other for the last dollar, and wind up with a nominal profit which was all they would ever get unless they were lucky enough to more than break even on service.

At the same time, whichever one of those six men made the installation had established a customer for some oil dealer who would receive not just one profit, but a definite, continuing profit for many years into the future.

Naturally, none of those six burner men had any desire to leave the area where they were established in business. There were some major oil companies selling fueloil direct to consumers, and others were selling to dealers, but all seemed content with their method of doing business. There was no oil business for sale.

As the years passed two of the six burner men gave up the idea, but the remaining four still retained the hope that there would be some way for them to get a profit on the fueloil used by the burners they sold.

Then it happened, in June 1959, Gulf Oil either had a change of heart or a change in policy. They announced that they would listen to an offer from the burner men. David D. Letts—Winkler Heating & Airconditioning Co., (Winkler), Clint Ward—E. H. Ward Co. (Timken), Carl Nosal—Nosal Heating (Delco) and John Daly—Daly Heating (Lennox) obtained the Gulf Oil plant and franchise for a district with a radius of approximately twenty miles around Lansing.

Fueloil Company set up

Guardian Oil Corp. came into being. The facilities—oil storage tanks, loading rack, warehouse, office and spur track were leased. The business as purchased consisted of fueloil accounts, lubricating oil and gasoline business (exclusive of Gulf owned service stations) six fueloil trucks (one more has been purchased since) and a pick-up truck.

It is reasonable to suppose that the

George O'Dell, right, manager for Guardian Heating Service—integral part of Guardian Oil's operation, stands in the company yard with one of his servicemen.

burner men who had been wanting to get into the oil business had some ideas of their own about how the business should be conducted. It is highly probable that there will be changes from time to time, but during the first year the business has been operated along these lines:

1. Each oilburner company has retained its own identity and there is little, if any, change in sales and installation policy.

2. The partners take no active part in the management of the oil business. As directors, they have control of all matters of policy.

3. An experienced manager is hired to assume full charge, including sales and office personnel, and all details of operation.

4. All oil truck drivers work on a commission basis.

5. Prior to change of ownership, Gulf sold kerosene, #1 and #2 oil. New owners discontinued kerosene and added #4 oil.

6. Burner service established as a joint venture and operated by Guardian Oil Corp., with service manager and servicemen a part of Guardian organization.

The burner service is designated as "Guardian Heating Service." As a part of the fueloil operation it enjoys an impartial status. As service manager, George O'Dell is in a position to solicit service contracts from all Guardian Oil customers. The service cars carry the Gulf Oil emblem, but there is no reference to the various burners handled by the owners of Guardian.

One of the advantages claimed for the service organization is volume business. Instead of four service managers, one can do the job. If there were four managers with parts stock and transportation facilities for each, the overhead would be unnecessarily high and in theory, at least, service men would be limited to servicing one make of burner.

The selling of service contracts by a burner dealer is not new, and it has been found beneficial in spreading the service man's time throughout the year, lightening the winter load and placing most of it in the summer months when work is often needed. As a preventive service it has proved its value to both customers and service organizations. Guardian Heating Service in Lansing has the backing of four burner companies as well as that of the oil distributor.

Guardian Heating Service offers three different plans in the form of service contracts:

Plan A—Special Summer Tune-up is inspection, adjusting, cleaning and oiling service — including vacuum cleaning of heating plant, if necessary. No parts. Price to customers not buying Guardian oil, $12.50. To Guardian oil customers, $9.95.

Plan B—All service as detailed in Plan A plus around the clock service to end of fiscal year May 31st of the following year. Price, non-Guardian oil customers, $18.75. To Guardian oil customers, $14.95.

Plans C—Includes all of Plans A and B plus repair or replacement of most major parts of the burner and heating system, without charge, should they become defective. The parts are itemized as: Aquastat, fan motor, electrodes, nozzle, ignition leads, burner motor, stack or circulator relay, Pressuretrol, fueloil pump, transformer, standard type thermostat, circulator motor, draft regulator and oil filter cartridge. Price to non-fueloil customers, $24.95. To Guardian fueloil customers, $19.95.

After all, results are what count. David Letts was asked how nearly the new arrangement is meeting expectations. Without direct quotes, his remarks were substantially as follows:

Results are measurable

Burner sales? Before going into the oil business, the good influence of oil companies on burner sales was negligible. Now, without exception, the owners are getting more burner business.

Service? The service departments of the individual burner companies were usually in the red. It was the exception rather than the rule for them to do better than break even. The Guardian Heating Service is not only removing the burden from the burner companies, but is making money.

How about competition? Two principal fueloil competitors have started burner divisions.

Natural gas, previously restricted in sales volume, now has an unlimited supply available. The oil and burner people had been concerned about the effect on their business when this condition would reach Lansing. There has been practically no effect on either oil or burner business.

Oil Profits? All and more than had been anticipated.

Nearly every business has its weak spots or disappointments—what is your answer to that? Letts replied that the only regret of the buying burner men was that they had not been able to get started with their deal several years ago.

Tanker to Truck bulk Plant

Millions of gallons of Fueloil flow through Metropolitan's storage Facilities

by John W. Schulz

THE BULK PLANT shown by the accompanying photographs is easy to reach, for it's strategically located close to the heart of The Big City. From Times Square and The Great White Way, you can reach it in a few minutes by automobile. You can reach it equally conveniently from the Bronx, Manhattan, and Queens, because its location is central to these three boroughs of the City of New York.

Once you're in the Bronx, the place is easy to find. The address is 939 East 138 St., Bronx, N. Y.—which is at the east end of 138 St., right on the East River.

You'd agree with the FUELOIL & OIL HEAT photographer who took the accompanying pictures . . . in finding the location to be both interesting and delightful. He could not take these pics on a perfect, spring afternoon without enjoying the sight of ferry boats leaving a nearby slip and churning out to nearby Brothers Island and Rikers Island. All the while, airliners flew directly overhead, gliding towards or soaring away from La-Guardia Airport, whose hangars and run-ways can be seen across an expanse of the East River.

Just outside the Metropolitan Petroleum Corporation fueloil bulk plant are city streets lined with cars parked bumper-to-bumper; these streets serve adjacent factories, tenements, business buildings, and modern apartment houses. Only a few miles away are New York's famous skyscrapers.

Tens of thousands of oil heated buildings, needing millions of gallons of fueloil a year, either are only a few miles away, or are within reasonable, short trucking distance. Each month in winter, thousands of truckloads of fueloil go from Metropolitan's bulk plant to these buildings.

A "deep-water berth" permits dockage of vessels of 17,000 tons to 35,000 tons—with cargo-carrying capacity of 125,000 barrels to 250,000 barrels.

Battery of meters, printing type and remote-control valves give the dispatcher, complete, remote control over everything to do with loading of trucks at the unified 28-position loading rack, part of which can be seen at the left.

View through the picture window from outside in the loading yard into the dispatchers' office. After loading, the truck operators stop to sign receipts.

Here are facilities to dock anything in the way of an oil tanker that can be docked. Tankers, including ocean-going tankers, bring in fueloils of grades Nos. 2, 4, and 6.

After a tanker is berthed, the fueloil on board it is analyzed before being discharged from the tanker into Metropolitan's storage tanks. This bulk plant accepts only fueloil of quality high enough to meet its previously stipulated specifications, which are more exacting than those of the pertinent Commercial Standards.

In addition to trucks, fueloil also leaves the plant in river barges, which go to truck-distribution plants to which deep-water oil tankers cannot

A close-up of a part of the 28-position, unified loading rack.

This boiler house (below) provides all the steam needed at Metropolitan's plant for heating the office buildings, keeping warm the No. 6 oil being sent into fueloil trucks at the proper temperature. Two Pacific steam boilers, each about 125 hp, are fired by Petro burners using No. 6 oil. Behind the boiler house (at the right side of the photograph) and as high as the roof of this house can be seen the south side of the storage-tank installation. This includes above ground, earth-covered storage tanks.

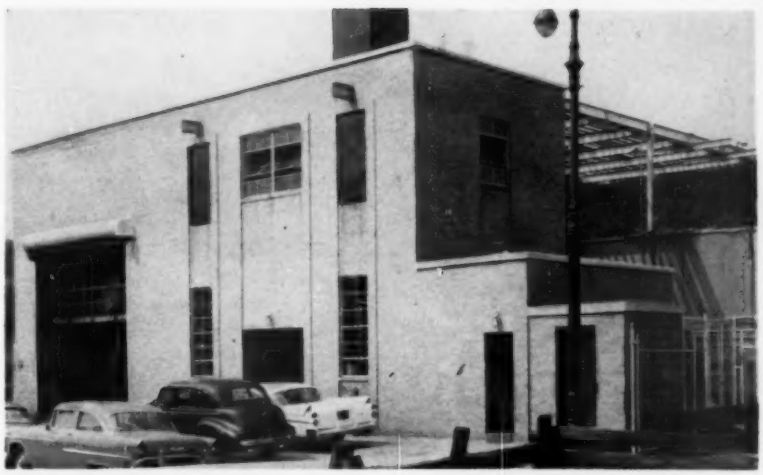
go. Typical river barges have capacities of 5,000 to 20,000 barrels, and transport all grades of fueloil.

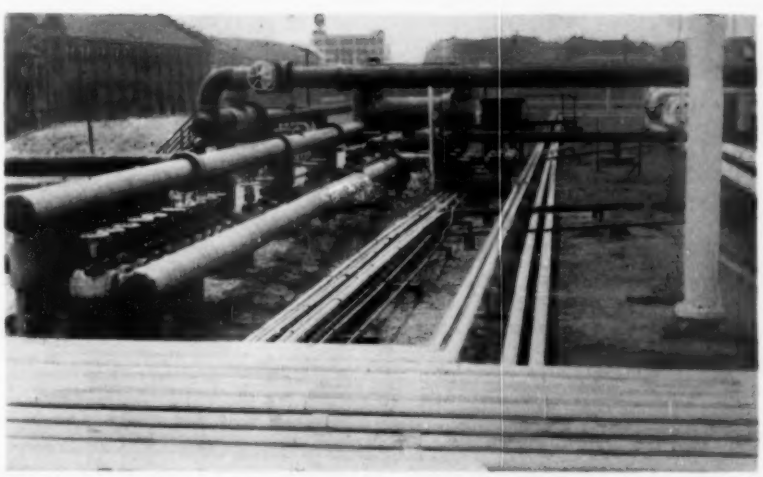
In keeping with the capacities of the ocean-going tankers used to bring fueloil to this Metropolitan bulk plant, the plant has storage tanks of vast capacities. These are located above ground, and have dikes around them; they conform, of course, to all safety and other rules and regulations which apply to them.

As the storage tanks are vast, the entire establishment is vast. It seems to occupy about four city blocks.

Success in the operation of such a fueloil bulk plant as this, Metropolitan executives know, depends on fast movement of fueloil delivery trucks through the plant. A truck must move in quickly, load quickly, then get out quickly.

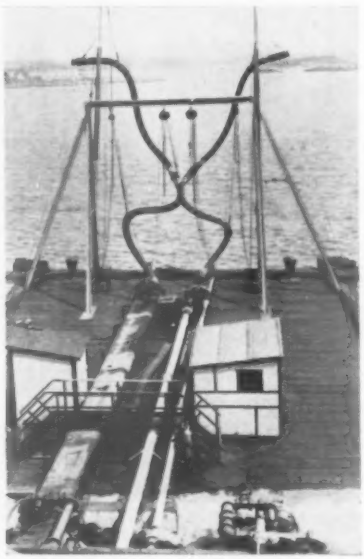
Metropolitan started in the neighborhood of its present plant, in 1939, with an earlier plant located four city blocks to the south of its present site. First, this early plant had side-by-side loading positions for four fueloil trucks . . . or a four-bay loading rack, centrally located. More loading positions were added as gallonage grew, and they were tucked in where room for them could be found. The old plant wound up with 19 truck loading positions jammed helter-skelter wherever they could be located in the original loading yard, and with ten





Atop the fueloil tank installation is this maze of steam pipes and oil pipes. The pipes going to the left run to the boiler house.

This aerial view provided by Metropolitan shows a tanker unloading and a good view of the entire bulk plant.



This is a view of the East River dock at which the ocean-going oil tankers can berth for unloading into Metropolitan's storage tanks.

more truck loading positions across the street. Trucks simply moved in as best they could, loaded (at 300 gpm or so), then tried getting out. Fueloil truck operators and bulk plant men mingled, going about the yard, to the trucks, and to different office buildings . . . as they had to in order to perform their duties.

Erecting their new plant in 1947, four blocks north of the old plant, Metropolitan's executives were properly determined to achieve maximum truck movement and truck loading efficiency in their new location.

In a clear area 130 feet wide and 400 feet long, they put a unified loading rack having positions for 28 side-by-side fueloil trucks—all headed the same way. The movement of the trucks is streamlined and ultra simple. All move in on the north side of the unified rack, load, then move out on the south side of the rack. Loading speeds are 600 gpm for Nos. 2 and 4 oils, and 500 gpm for residual oils.

Accompanying photographs show the dispatchers' office and its large picture window which permits the dispatchers to see the entire loading yard. In this large, pleasant office, heated in winter and airconditioned in summer, the dispatchers control everything having to do with truck loading, fueloil metering, and printing of tickets. They open and close the loading-rack fueloil valves by remote control.

For the No. 2 fueloil that's leaving the plant, Metropolitan has dehydrators. All the No. 2 oil passes through them so that any trace of water that might have been in the oil is extracted. The aim is to eliminate any chances of delivering traces of water along with the oil.

For the No. 6 oil, there's a hot-water heating system to keep the fuel-oil in the storage tanks at a certain, desirable temperature. In addition, preheaters in the lines to the loading racks insure that the No. 6 oil goes into the trucks at a proper temperature.

This bulk plant has meters for No. 6 oil. They permit the plant to do its own checking, for one thing. For another, they permit loading an oil truck only partly; a truck can come in partly loaded with No. 6 oil, and can be filled with the oil going through a meter.

Metropolitan Petroleum Corporation is a division of the Pittston Company, and operates 20 fueloil bulk plants including two in Brooklyn, one in Queens, three in Nassau County, three in Suffolk County (including a cargo plant for No. 2 oil at Port Jefferson, which can berth ocean-going tankers), two in Westchester, four in New Jersey, and one in Stamford, Conn. In addition to the Bronx plant on 138 St., described in this article, Metropolitan has a plant on Exterior St., the Bronx. It has additional facilities in upstate New York and other places.

'Soft' Refractory cuts Complaints

by N. J. Driscoll*

A THREE YEAR test program, recently completed by Edwards Engineering, has revealed that most of the advantages claimed for gas over oil-heating can be easily offset by the burner manufacturer. Our tests have shown that use of a recently developed ceramic felt lining for oilburner combustion chambers eliminates many of the more common complaints.

In burning oil, the skin temperature of the combustion chamber refractory has to reach incandescence almost instantaneously, otherwise combustion of the oil is incomplete and soot and odor evolve. When a burner has to heat up a refractory wall from 200°F., the average water temperature of the boiler, a good deal of potentially usable heat and time are lost. In addition, soot begins to accumulate on the tubes and in the flue, reducing efficiency.

About three years ago we were introduced to a material called Cerafelt.[1] This is composed of alumina and silica fibers bonded together to form a flexible, blanket-like structure. Our initial interest was not primarily concerned with its economies and advantages to the ultimate user. We were looking for a flexible lining equal in performance to the heavy, rigid refractory material we had been using, that would ease our problems resulting from shipping damage, and poor initial combustion resulting from the wet condition of new refractory.

We ship our units to the West Coast and to as far North as Alaska and the outreaches of Canada, with about 60% of shipments going out during a period of three months. One of our most troublesome problems was breakage in shipment. This has been completely eliminated by using Cerafelt—you just can't break a felt hat.

During our initial investigations to determine the feasibility of converting to this combustion chamber lining, we obtained some samples and put them into a few boilers over which we retained complete control, as an experimental test program. This test ran over a period of three years, units being observed both in our plant and in selected homes in the field.

Initially, we determined the speed with which the Cerafelt chamber walls reached incandescence. Using cobalt lenses with test units, we discovered that the combustion chamber came to incandescence almost instantaneously. Thus there is practically no time lag.

Test Results

During the three year test period, we checked all experimental units periodically throughout the heating season, as well as at the end of the season. We did not at any time clean out the flues, as is normally done. Last year we pulled some installations completely apart and discovered that the flues were entirely soot-free, indicating that combustion efficiency had never deteriorated during several seasons of operation. This efficiency means considerable fuel savings, up to $40 to $50 a year to the owner of a six-room house in the North-East.

In addition, we found that the new material cut considerably the amount of undesirable noise commonly associated with high-pressure gun-type burners which we use. We use Shell-Head oilburners for all our boilers because of their inherent high efficiency, and the high velocity of the air being fed to the oil. In a conventional refractory chamber, because of its hard reflective surface, the oil roar is often magnified. We have found that the soft, dense structure of Cerafelt absorbs many of the standing sound waves formed by the roar of the flame, dropping sound levels, and the resulting external vibration considerably.

At first we were overly cautious and lined our refractory chambers with Cerafelt, in case it broke down in service. We have yet to find out about such a breakdown, and since that time we have converted entirely to Cerafelt, completely eliminating the refractory. And by doing so, we have just about eliminated service calls resulting from soot in flues, or tubes, and in stack-switch mechanisms.

To complete the cycle, we have made available replacement kits for servicing our own units. These kits have proven a boon to field servicemen. According to reports we receive every week, the time required for replacement of a combustion chamber has been cut from one or two days to less than an hour.

Normally, in replacing a damaged refractory it is first necessary to take out the burner, chop away the bolts, and then get inside. The old refractory is then chopped out, piece by piece, and the new refractory forced into place. With a Cerafelt replacement, all the serviceman has to do is to remove the peephole door or the sight door and the oilburner. No old refractory has to be removed, as the Cerafelt lining goes right over it, and because of its flexibility, it can be easily inserted and put in place with no strain.

Cerafelt, cut to shape and size, is placed in the heating unit through the bottom. It is smoothed around the inside of the firebox which was coated with cement.

*Chief engineer, Edwards Engineering Corp., Pompton Plains, N. J.

[1] Developed by Johns-Manville Insulation Research.

Tankless Terminal

HEATING OILS can be loaded into a transport directly from underground pipelines at a tankless take-off operated by Standard Oil Co. (Ind.). In operation for more than a year, the Trenton, Mo., terminal has no storage tanks and needs no operating personnel.

Remote control is the answer. As shown in the pictures the driver merely checks with the Chicago dispatcher to make sure that the pipeline is carrying the product he wants.

If all's well, the dispatcher releases the motor operated valve with a telephone code call. The driver uses his key to unlock the valve and fills his tank.

Standard Oil plans three additional tankless terminals, one near St. Joseph, Mo., and two in Michigan. A modified installation is planned for Cedar Rapids, Ia.

Driver calls central pipeline dispatcher in Chicago to make sure the product he wants is flowing past as scheduled.

He inserts delivery ticket into printing meter before taking load of product off pipeline at tankless terminal in Trenton.

Key-operated control permits the pipeline dispatcher to dial open the valve for the desired product. Valve closes automatically when the order is filled.

Chicago dispatcher releases a motor-operated valve by dialing a remote-control telephone code number permitting driver to load truck direct from the pipeline.

Oil is 'free' at $3.90 a Barrel

Stud Mill in Washington changes to automatic Operation and makes Money on the Deal

THAT WILL BE THE DAY—when we have free fueloil. Anyone in the fueloil business or any other business will laugh at such a preposterous idea. Something for nothing, while universally sought after, is recognized as being in the same category as perpetual motion.

One of the many definitions of "free," and the one most usually associated with the acquisition of goods, but seldom taken seriously, is—"without cost." It may be hard to believe, but Bob Williams and his father operate a stud mill in Arlington, Wash., and their 60 horse power Powermaster boiler operates 24 hours a day, with all fuel costs prepaid.

There are so many kinds of mills operating in this industrial nation that many of us would not know a stud mill if we saw one. In lumbering districts the production of studs is an important specialty of a diversified industry. Now that the subject has been reduced to lumbering, nearly everyone who has had any contact with frame building, recognizes the ever present "2 x 4" as a stud.

As studding is a basic part of practically all frame construction, it is easy to understand that stud mills would be a logical specialized operation of lumber mills engaged in the process of transforming trees into conveniently usable lumber products.

Every lumber mill, during the many years since they have become quantity producers, has had a common problem. There has always been an undesirable amount of waste wood products. (Within the past few months there has been an announcement by one large operator, that every pound of a felled tree would soon be profitably utilized.)

Carloads of slab wood are cut, hauled, stacked and delivered every year. These larger, non-lumber pieces, which are not suitable for building construction, are not the major problem. Much of the sawdust has a useful purpose, but it is all the odd shapes and sizes, the unsound, and the otherwise unsuitable wood for any constructive purpose which have long been a headache.

Huge cone-shaped steel incinerators, shaped like Indian teepees, with spark arresting screens at the top, are a part of nearly every sawmill picture. They consume waste products, and pungent wood smoke pours out day and night to blanket the mill areas for miles.

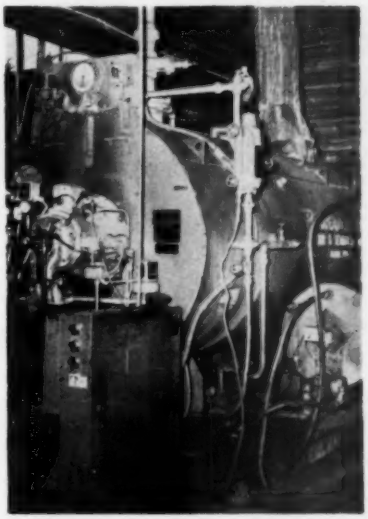
Sawdust is not too difficult to burn. For the amount of energy it produces it is extremely bulky, and even when handled mechanically its storage requires considerable space. Some years ago an attempt was made to use it as a domestic fuel. Even with burning devices which were largely automatic, home basements were primarily sawdust bins and it was almost impossible to keep the untidy grains of wood from the living quarters of the home.

The automatic oilburner soon asserted itself. Sawdust, the economy fuel which cost little more than hauling costs, ceased to be a factor in the domestic heating market. But it continued to accumulate at the mills, for in the rainy weather the wet mountainous piles of "fuel" would not burn.

A "hogger" was developed which would reduce the wood which was useless and difficult to handle, to a chipped or shredded state. The origin of the name hogger is somewhat vague, but the farmer who has seen a hog eat does not need much imagination to think of the wood pulverizer process as hoggish. The product has become generally, if not officially, known as hog-fuel.

The M & R Stud Mill is the name of the Williams operation at Arlington. Compared with some of the gigantic mills in the Pacific Northwest, it would seem small. As is the case with many industries, it is not the size which determines the returns, but the efficiency of operation.

Gasoline and diesel oil-powered equipment has supplanted the snorting little steam engines which once



A 60 hp Orr Sembower Powermaster unit generates steam for the two Dryolators used for wood drying at the M & R Stud Mill, in Arlington, Wash.

helped move logs. Saws and conveyors now respond to the motor power which is delivered on wires. For some time it seemed that the only possible way to use even part of the ever present hog-fuel, was to use it as fuel for the kilns used to dry the studs.

Then efficiency brought about a situation almost parallel with the famous "carrying coal to Newcastle." It was discovered that it was costing too much to use the fuel which was practically a waste by-product of their own operations.

Drying studs is necessarily a continuous operation. It starts with 65,000 to 70,000 feet of studs stacked and rolled into the kilns. They are so wet, immediately after being sawed, that they are practically dripping. Two days of continuous, controlled drying produces a product ready for loading into freight cars.

That is where the free oil enters the story. The use of hog-fuel required the services of three firemen—three shifts for every 24 hours. In round figures, that represented a cost of $75 per day for labor alone. Aside from that, storage space was required for the hog-fuel. Even with good work-

Top photo: Hogger at lower right reduces waste wood to a chipped or shredded state; a conveyor belt elevates the resultant hog fuel to the hopper. Shown is the M & R Stud Mill's $15,000 truck loading for a delivery to a paper mill. In the bottom photo a farmer's truck loads up at the sawdust hopper. He'll use it to dry up muddy areas on his farm and also to treat the soil. Between these two activities, the M & R Stud Mill now disposes of sawdust and hog fuel at a profit, enough so that the Williams consider they pay nothing for the fueloil required to operate a modern steam generator for wood drying purposes.

men, the dried products were not always up to the desired standard.

Jack Frost, of Superior Engineering Co., Seattle, has been saving people money for many years by proper engineering and installation of commercial and industrial fueloil burning equipment. As Washington representative for Powermaster packaged boilers and Dryalator automatic drying systems made by Orr & Sembower, the M & R Stud Mill proved a perfect prospect.

First a 60 hp. fully automatic Powermaster package boiler-burner unit, a 5,000 gallon oil tank, and a Dryalator unit were installed. After a few months operation, a second Dryalator was added and connected with the same boiler. PS400 fueloil is delivered in tank trucks at $3.90 per barrel. The oil costs approximately one-half previous labor expense.

On that basis, the oil is not only free, but it is paying for the new equipment which automatically controls and permanently records the temperature and humidity in the kilns. The new installation also produces faster drying and a superior product.

But that is not all. A new $15,000 truck is hauling away the hog-fuel which was formerly used as dryer fuel, and some additional waste which did not previously warrant the purchase of a truck to haul it away. The proceeds are not only paying for the truck, paying the drivers wages, but also supply enough income to more than pay for all the oil now being burned for the drying operation.

Hog fuel Market

The senior Williams was asked where he found a market for his hog fuel. He explained that nearby farmers used some of it. In a district where there is considerable rainfall over a period of several months, there is a tendency for barnyards to become excessively wet and muddy. The hog-fuel and sawdust not only make a good moisture absorber, but, when spread on fields at a later time, constitute a desirable soil conditioner. The farmers often haul the hog-fuel they buy, with their own equipment, for $8 a load.

Williams pointed out that paper mills were the largest users. The new truck which carries 25 units per load, makes five trips a day, at $20 a load.

Williams outlined the situation briefly by explaining that the bark from the logs which are to be ground for pulp, is removed by high pressure streams of water. The bark is introduced into the fireboxes of boilers being fired with fueloil. It serves two purposes; disposes of waste products and is a good fuel. However, the bark is so wet, because of the hydraulic removal process, that it "kills" the oil fire. By adding the relatively dry hog fuel from the stud mill, it is possible to produce efficient combustion. It may look like a case of "the blind leading the blind" but it pays dividends.

It may require a slight stretch of the imagination to call fueloil, which has a price tag of $3.90 a barrel, free. The M & R Stud Mill has made no announcement of its intention to return to free hog-fuel for firing stud drying kilns. Fueloil looks to be a permanent profit paying proposition.

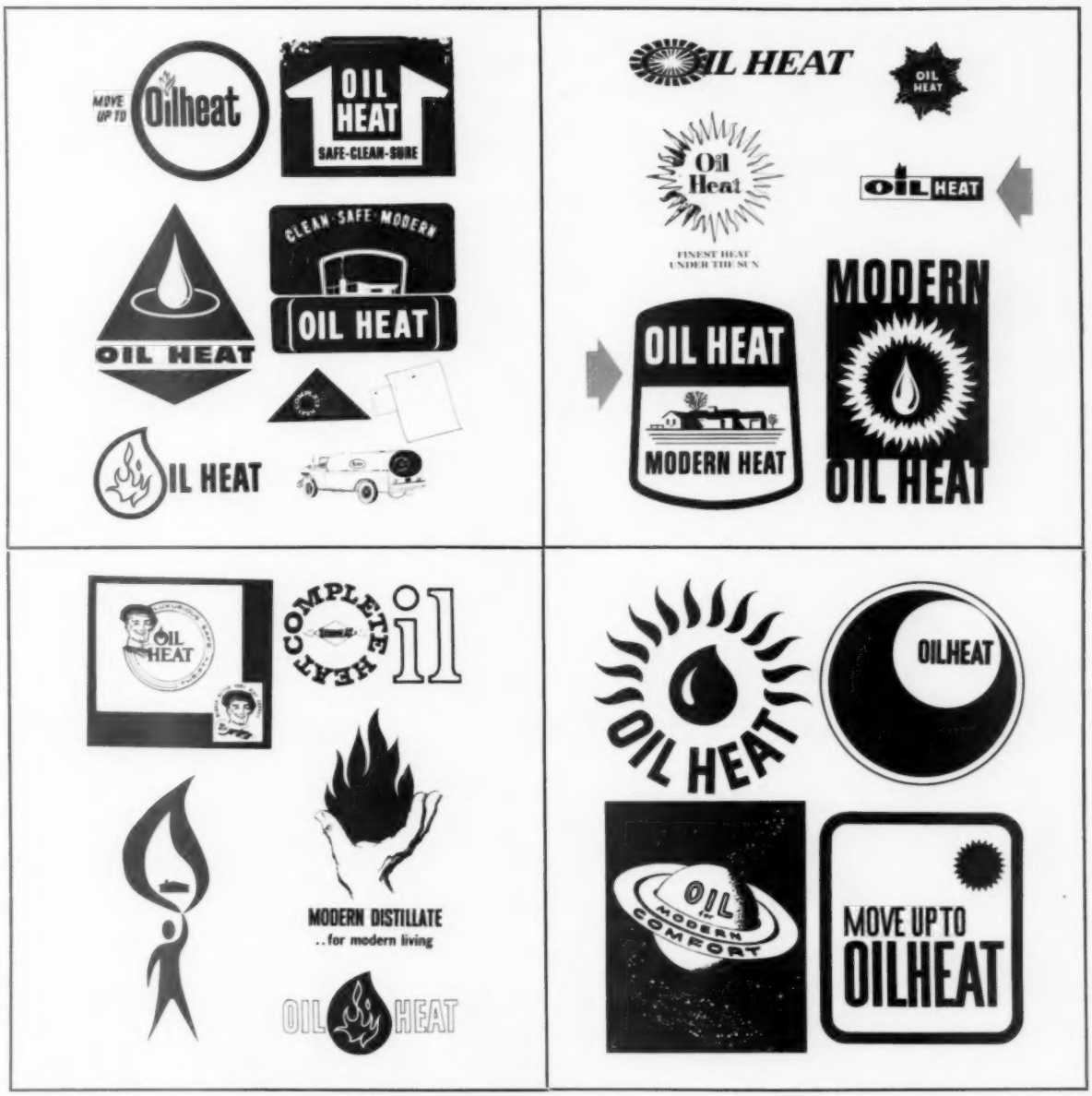
Providence, R. I., Duluth, Minn., win NFC Symbol Contest Awards

THE NATIONAL FUELOIL Council, New York, announced in March a contest to design a suitable symbol to typify the oilheating industry in promotional activities.

A jury of advertising experts on June 16 awarded a split first prize of $250 each to the advertising agencies handling the Providence and Duluth campaigns. The judges first narrowed the 50 entries down to the smaller group shown here, then further narrowed the number to five and finally split evenly on the two shown here by arrows. The smaller one was by I.F.I. Advertising Agency, Duluth, Minn.; the larger by Creamer, Trowbridge & Case, Providence, R. I.

To resolve the tie and come up with a final symbol the advertising artists of the major oil companies represented or their agencies will submit sketches harmonizing the two concepts.

The judges were: R. Borden, adv. mgr., Atlantic Refining Co., Philadelphia, Raymond C. Keck, adv. mgr., Cities Service Petroleum, Inc., New York, Robert M. Gray, director adv. & sales prom., Esso Standard Div., New York, B. W. S. Dodge, director adv. & sales prom., Gulf Oil Corp., Pittsburgh, J. D. Elgin, manager adv. & sales prom., Mobil Oil Co., New York, Dexter W. Goldthorp, fueloil adv., Mobil Oil Co., J. J. Delaney, adv. mgr., Sinclair Refining Co., New York, Steve Toth, senior designer, adv., Shell Oil Co., New York, Wm. B. Daub, adv. mgr., Industrial Products, Sun Oil Co., Philadelphia, and A. R. Senftleben, supervisor sales prom., Tidewater Oil Co., New York.



Kingston, N. Y.

OILHEATING MARKET REPORT

IN AN AREA of restricted size around the city of Kingston, New York, the fuel-oil dealers have organized under the name of the Hudson Valley Fuel Oil Distributors Association. While the market characteristics of this district are similar to those of neighboring Dutchess County, across the Hudson River, it seems practical to consider each of these two markets separately.

This, however, does not preclude an ultimate amalgamation of the two promotional programs. As a matter of fact, one agency will handle the advertising for both industry groups (Sabin Advertising Agency, Kingston). The same utility (Central Hudson Gas and Electric Corp.) distributes natural gas in both regions.

Bordered by the Hudson and the city of Kingston on the east, the territory extends roughly in a semi-circle to about 35 miles west. This area includes the bulk of the County's oilheating business, the balance of the territory being typical Catskill Mountain vacation-resort country.

In 1950, the population was estimated at 60,512 for this portion of the county, increasing to 75,374 by 1957. An additional 20% increase in the next ten years is forecast. One-and-two-unit dwellings number about 24,000, mostly (75%) in the $15-20,000 valuation range.

Home heating Characteristics

The popularity of the three principal fuels for home heating runs about as follows, measured in numbers of installations:

Coal	2,800
Oil	16,675
Gas	3,900
Other	400
Total	23,775

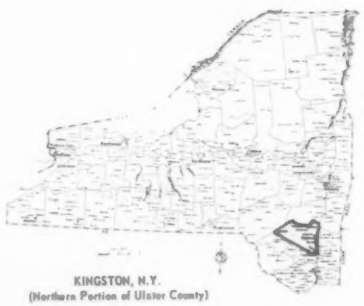
In addition to the fueloil usage indicated—which includes centrally-heated homes, and a small minority of non-central, kerosene-burning installations—there are approximately 3,000 additional installations in small-commercial establishments and a limited number of multiple-unit dwellings.

Competitive fuel costs

Natural gas service, by the Central Hudson utility, is concentrated around the city of Kingston and in portions of the town of Saugerties. In its usage for house-heating, the rate for typical volumes averages round 14¢ per therm. This gives the edge, in economy, to No. 2 fueloil, which costs (last winter's high) 15.6¢ per gallon, or 11.1¢ per therm. Thus gas heat, on this basis, costs 25-30% more than oilheat.

Fueloil Distribution

Our estimate of the total volume of



KINGSTON, N.Y.
(Northern Portion of Ulster County)

No. 2 fueloil marketed in this less-than-full-county area comes to 36,000,000 gallons, about a third of this being utilized in small commercial-small apartment heating applications. The major companies bring in about 87% of this volume, independent wholesale suppliers the balance. In direct-to-the-consumer business the independent marketers sell 81% of the tank wagon gallonage. The rest of the retail business is shared by major and independent suppliers.

Other Distribution and marketing Characteristics

Other facets of the local marketing pattern are suggested by the following measurements: (See table below.)

Promotion and Industry Organization

Natural gas service was introduced in the local utility's territory in 1950. Advertising promotion of this fuel for house-heating, in the past four years, has increased from about $4,500 in the Kingston area newspapers and radio, to $6,000 in 1959.

The fueloil dealers of this market spent no money in promotion during the last three years. Before that, though, in 1953, 1954 and 1955, they spent about $1,000 a year, in newspaper and radio.

In the new Hudson Valley Fuel Oil Distributors Association approximately 99% of the area's retail fueloil volume is represented through the membership of the local dealers. Promotional plans call for more than tripling the dealers' total promotional investment, to $3,600. Doubled, through NFC financial assistance, this would make for a fairly substantial advertising budget. Dealer contributions are scaled to a rate of $100 per year for each delivery truck in No. 2 fueloil service. A group of three members will act as a committee.

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Total oilheating installations in market made by:	
(a) Fueloil companies	76%
(b) Plumbing and heating (non fueloil) companies	24
Fueloil companies also marketing gasoline	20
Fueloil companies also selling coal	15
Fueloil companies selling oilheating equipment	23
Market's oilburners serviced by fueloil companies	62
Market's oilburners serviced by non-fueloil companies	38
General level of distribution "refinement" in fueloil companies' operating practices	Good

(NOTE: The local gas company renders very little burner service excepting in case of emergencies, or for "maintenance-of-flame.")

Midwest Farmer potential oilheating Market in '60

A SURVEY conducted by the Midwest Unit Farm Papers indicates that the 961,158 subscribers will buy during 1960 a greater amount of heating equipment than they did during 1959. Eight states (Indiana, Illinois, Wisconsin, Minnesota, Iowa, Nebraska and the two Dakotas) comprise the market with an annual income of $9.5 billion.

According to the "buying intentions" survey some 24,029 farms will get new oilfired furnaces; another 5,767 farms will get a new oil conversion unit for an existing furnace.

Water heaters fired by oil are on the purchase list of 3,845 farmers. However, an additional 55,746 intend to buy LP-GAS or electric water heaters and might be considered a potential market if sold on the idea of an oil unit.

It is anticipated that 11,534 rural homeowners in the area want to purchase a complete airconditioning system for their houses.

Air pollution Research is carried on by API

SINCE 1952, the American Petroleum Institute has invested more than $1.3 million in air pollution research according to a new API publication, "Oil Facts." During the same period individual oil companies spent an additional $66 million in the development of controls designed to provide purer air in the areas where they operate.

The Institute has established 14 projects at the Franklin Institute, The Universities of Wisconsin, Illinois and California, the Stanford Research Institute, the Industrial Hygiene Foundation and the Armour Research Foundation. Nine of the projects have been completed; work at others is still in progress.

One major result of the research has been the development of "Silent Sam, the Smog Detective." The device is a long-range, infra red spectrometer which identifies air pollutants and can also brew synthetic smog.

Servicing big Burners presents many Problems

A Day in the Life of a Serviceman who works on apartment house Oilburners in New York

by Jean L. Dupuis

MEETING Harry-the-serviceman on a spring morning by appointment, three months ago, I commented that at 8:00 a.m. the temperature was 43°F. I had arranged to accompany Harry for the day as he answered routine service calls of large New York buildings.

He answered, "That's cold enough for tenants to holler in an apartment house without heat. Most oilburners I work on have weather-control systems that regulate building heat according to outside temperature. Usually we keep the radiators more-or-less warm all day when the outside temperature is below about 55°F."

We'd make our first service call, Harry told me, because of a breakdown of one of two boilers providing hot water and steam heat in a 70-family apartment house.

"The building superintendent phoned that the serviceman should bring a new oil pump for his rotary-cup burner," Harry added.

He laughed and went on, "I could install more than 100 new pumps a year, not one of them needed, if I believed every building super who says a pump won't draw oil, is worn out, and should be replaced."

The building superintendent was waiting for us in the boiler room. He quickly explained that since the preceding Friday, four days ago, he'd been able to fire only one of his two 60-horsepower boilers. Firing the other boiler continuously heated only two-thirds of the radiators of the one-pipe steam system, and for the four days had brought howls of protests from the tenants in apartments where the radiators remained cold.

Why had the super waited four days before phoning for a serviceman? He said he had strict orders not to waste money by placing unnecessary oilburner service calls.

For the four days, therefore, the building super himself had tried to fire the ailing oilburner. Sometimes it showed signs of life, produced a flame for a few minutes. That made him hope the trouble was over.

"But I finally have to conclude," the superintendent said, "that the oil pump in that burner is just plain worn out. It can't draw oil from the storage tank. So install a new oil pump in the burner right now, and I'll be able to raise two or three pounds steam pressure and end all the hollering from the cold tenants."

By this time, Harry-the-serviceman was ready to check things for himself. He had installed a vacuum gage in a pipe tee between the pump-type burner and its suction-line strainer.

"Where's the new oil pump you'll install in that burner?" demanded the building superintendent.

"Running the burner motor with the suction-line valve open produces spurts of oil flame in the firebox," Harry said. "The oil-pressure gage on the burner gives unsteady readings—its needle stays at 60 pounds a minute or so, then drops to zero for quite a few seconds. The vacuum-gage needle climbs to ten inches, then drops back to zero.

"Where's the new oil pump?" the building superintendent demanded again.

"Now I close the suction-line valve. It's on the tank side of the suction-line strainer, of course," Harry went on. "The needle of the vacuum gage goes no higher than 13"."

The super shouted, "Start installing the new oil pump! Can't you hear the people upstairs pounding on the steam pipes? Some of them haven't had heat for the last four days!"

Harry-the-serviceman turned to face the superintendent and asked, "Now, this suction-line strainer couldn't be

dirty and plugged, could it? Because didn't you clean it last Friday?"

"Yes, I certainly did," the super exclaimed. "Always do before a week-end during the heating season, to avoid burner trouble over the week-end. So the strainer basket is clean, and no dirty strainer is causing the trouble. Now, get to work and install the new oil pump. Get started! That may take you a few hours, and all you've been doing up to now is wasting time!"

"I'll give you proper oilburner operation in ten minutes," Harry replied, "because I think the only trouble lies in an air leak at the cover of the suction-line strainer. When you cleaned the strainer last Friday, you damaged or broke its gasket, which goes on its cover."

My serviceman friend proved he was correct. After he replaced the strainer gasket, the burner ran beautifully. We had been in the boiler room less than 20 minutes.

The second service call we answered was caused by ignition-system failure. Harry replaced the high-voltage cable of the gas-electric ignition system. This burner fired about 35 gph—used No. 6 oil, as did the first burner Harry had worked on.

He commented, "It's not surprising to have to replace such a high-voltage cable after it's been in use six years. The insulation on that cable deteriorated and caused a short circuit, because of soot on the cable and high temperatures. To do well at commercial-industrial oilburners, a man must be an expert at their ignition-system troubles."

Our third service call involved ignition delay coupled with failure of the burner's primary control to stop the burner, which fired No. 4 oil at the rate of 12 gph. Harry judged that the burner must have run for at least an hour before the janitor in the building noticed it was running but producing no flame. The janitor had opened the burner's main switch.

Necessary work for Harry-the-serviceman included removing and cleaning carbon from the ignition-system assembly, firing up carefully and burning the fueloil accumulated in the firebox, and adjusting the primary control for its proper 90-second try-for-ignition period. All this took up more than an hour's time.

Harry said that the sales engineers of his company were working at selling modern, electronic, combustion-safety controls to the owner of the 12 gph oilburner.

"It used to be that only six or eight years ago a typical serviceman, like me, might have been stupid enough to say he did not like electronic safety controls for these big burners," Harry admitted with a grin. "But now every serviceman I know, who is at all qualified to work on commercial-industrial oilburners, is all in favor of electronic safety controls. Once you know the miracles of the protection they provide, how they work, and how to work on them . . . you become really enthusiastic about electronic safety controls."

The fourth service call we answered had to do with trouble which made us sad, because the trouble is increasing and there's no easy solution for it.

In the 250-family house having the trouble, the building superintendent or his assistant had to give make-up water to the two 190-horsepower steam boilers three times a day . . . each time adding enough water to raise the levels in the water-glasses about six inches.

The apartment-house owner himself was on hand in the boiler room when we arrived, which was unusual and indicated how worried the owner was.

Harry-the-serviceman proved ready to assume that the steam piping of the heating system, and all of the returns, had no unusual and important leaks to account for the vast amounts of make-up water the boilers needed daily. He'd been on the job before, during extremely cold weather, when the two boilers could not be shut down, but when extensive efforts were made to find steam or condensate leaks with up to ten pounds pressure in the entire heating system.

Harry addressed himself to the owner of the apartment house and said, "With no steam or condensate

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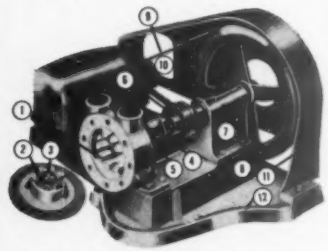

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leaking from the entire system of steam piping, returns, and radiation, those two boilers are taking perhaps 500 gallons of make-up water each day. That amount of water is leaking out of the heating system some place. It must be leaking out of the boilers themselves."

The owner, who right along was proving himself both reasonable and well informed on boiler-room problems, started examining the floor around the boilers, which was bone dry.

"No, you won't see water on the boiler-room floor, leaking from the boilers," Harry-the-serviceman explained. "I think the boilers are suffering from internal bleeding—or internal water dripping. True, 500 gallons per day, per 24 hours, is a lot of make-up water, even for these two, big, 190-horsepower boilers.

"But divide the 500 by the 24 hours in a day, and you wind up with about 20 gallons of water per hour. Divide by the 60 minutes in an hour, and the 500 gallons of water per day amounts to only one-third of a gallon per minute. Hot all the time for the sake of its tankless water heater, one of these boilers can lose one-third of a gallon of water a minute through a few leaks inside the boiler's firetubes.

"With the boiler kept hot, that is, leaks of a few tubes, or of 15 or 20

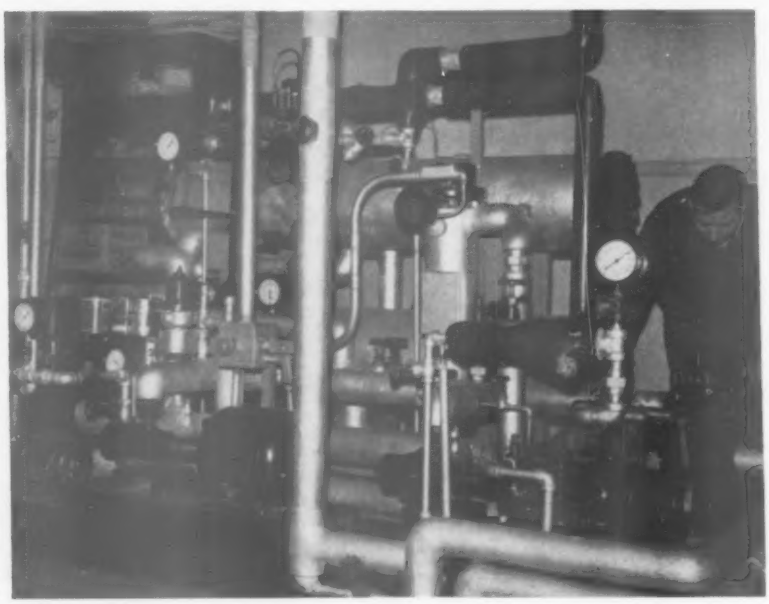
COMMERCIAL & INDUSTRIAL oilburning

tubes, won't show up as water on the boiler-room floor, or as water in a combustion chamber. The water leaking from the tubes will evaporate, then will go up the chimney as water vapor. You won't see any of it in the boiler room, around the boilers or elsewhere."

Harry-the-serviceman, with the owner's permission, started the work of proving his point, aided by the superintendent of the apartment house and the super's assistant. They stopped the oilburner, and opened clean-out doors to inspect both the rear ends and the front ends of the boiler's firetubes.

True enough, first signs of steam appeared—boiler water leaking into more than a dozen tubes and evaporating. As the boiler temperature dropped (it dropped fairly rapidly in a half hour, as to drop it the tankless water heater load of the entire building had been put on this one boiler), first droplets of water, then little streams of water, came from the leaking firetubes.

"How can the tubes of this seven-year-old boiler be leaking so badly,"



the owner of the apartment house wailed, "when from the start we have been using the best water-treatment service available? The scientific use of chemicals, given the boiler every month by experts who analyze both the make-up water and the boiler water, was supposed to give absolute protection to the boiler metal—absolutely prevent the boiler water from attacking the metal."

Harry-the-serviceman agreed, but sadly. He felt as certain as he could be, he assured the owner, that the excellent treatment of the boiler water had prevented any attack on it by the water in the boiler. As he spoke, he was diligently using flue clean-out brushes of several kinds to clean out portions of the leaky firetubes so that he could study their surfaces closely.

Fire-side Damage

Then he told the owner, "I'm very sorry, but the leaking of these tubes, which will cause you the expense of replacing the leaking tubes, has been caused by chemical attack on the fire-side of the tubes, not the water-side of the tubes."

Harry explained to the owner that some of the crude oil now coming from oil wells contains appreciable amounts of alkali sulfates and vanadium. Inevitably present in these samples of crude oils, these are undesirable chemicals.

The objective of the oil refineries, Harry went on, is to wind up with greatest possible amounts of the products (obtained from the crude oil) which sell at relatively high prices. These include what we can call the "expensive" petroleum products, selling for much per gallon. Good examples of these are high-test and regular gasoline, kerosene, and No. 1 fueloil . . . coming down the scale a bit, even domestic fueloil No. 2 can be included in the category of these highly refined and relatively expensive products.

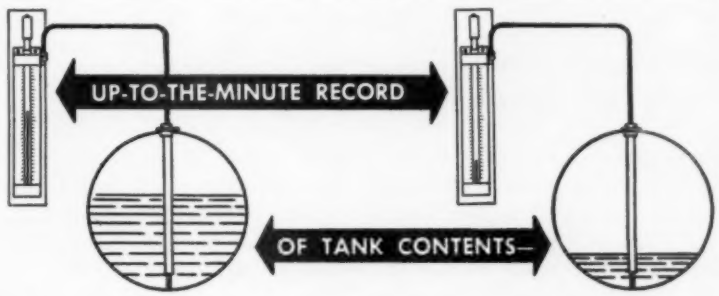
Simplifying things a bit, Harry went on, you can say that residual fueloil, particularly No. 6 oil, is the dregs left in the bottom of the pot after all the highly refined "expensive" products have been boiled out of the pot and separated and refined . . . by processes starting with fractional distillation.

Here's the trouble we face today, went on serviceman Harry. In some of the crude oils are significant amounts of the two undesirables, alkali sulfates and vanadium.

As refineries have succeeded in obtaining from the crude oil more and more of the "expensive" products, the undesirables in the No. 6 oil have become more and more concentrated.

From a certain kind of crude oil there once came relatively little gasoline, for example, and relatively much No. 6 oil. The undesirables originally in this crude oil wound up, all of them, in the No. 6 oil. But these undesirables still represented a small amount, percentagewise, of the No. 6 fueloil.

Next, refining processes improved to the degree that only half as much No. 6 oil wound up as the dregs of refining this particular crude oil. But still the No. 6 fueloil wound up containing all the undesirables originally



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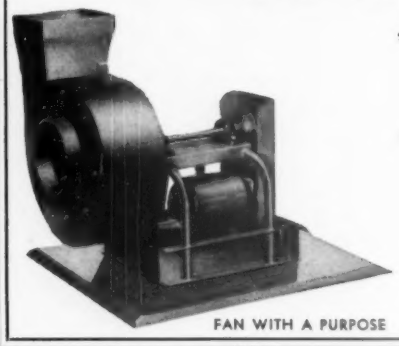

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in the crude oil. Naturally the amount of undesirables (including the harmful-to-boilers alkali sulfates and vanadium) became twice the original amount on a percentagewise basis. If the No. 6 fueloil originally produced contained 2% sulfur chemicals, for example, as the result of this concentration tendency the No. 6 fueloil now produced would contain twice as much of these sulfur chemicals, or 4%. That's just by way of example, of course, Harry-the-serviceman told the owner of the apartment house.

He concluded, however, that the damage to the boiler tubes, which were leaking because of fire-side attack, was related to the modern trend which includes higher and higher percentages of undesirable and (in effect) metal-attacking chemicals in No. 6 oil. The removal of these undesirables from No. 6 oil at the refineries is utterly unjustified on an economic basis, Harry concluded. Buying No. 6 oil at prices almost absurdly low, a building owner buys the dregs of the refinery . . . and along with the dregs he must take the alkali sulfates and the vanadium which are originally present in the crude oil.

Harry and I went on a few more service calls that day. But we were not as gay as we had been earlier, before we saw the boiler tubes which had been damaged by fire-side attack of the boiler metal.

"As yet a serviceman can do nothing about such boiler-damaging attack," Harry concluded sadly, "except to be able to explain its causes fully to the owner of the boiler."

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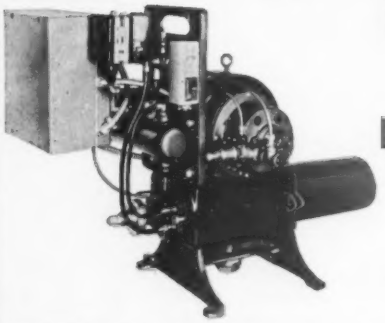

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Truck Talk

by Chet Cunningham

COMMERCIAL APPLICATION of the gas turbine for over-the-road trucks is here. Boeing Airplane Company in Seattle, has announced that its Boeing 502 series gas turbine engine is now available.

The engine, shown in a cut-a-way version, looks almost like an automatic transmission or a torque converter.

At the left of the diagram is the compressor case of the engine, followed by one of the two combustion chambers. Slightly to the right is the gas turbine blades on the wheel which drives the compressor. The next turbine blade just to the right is driven by the high speed gases escaping and is the power output. It is coupled to the reduction gearing shown.

Since there is no mechanical connection between the powerplant's two turbines, the engine actually has a built-in torque converter.

This engine has been 17 years in the making, Boeing says. It works this way. The engine draws in air from the atmosphere, compresses it, heats it by burning fuel in the compressed air and the force of these hot gases turns a turbine wheel which produces the useable horsepower.

This 502 engine turns out from 240 to 360 horsepower with a specific fuel consumption as low as .89 pounds per horsepower per hour. Another group of heavier engines going from 375 to 550 horsepower is currently under test.

The 502 weighs only 335 pounds dry, is 45 inches long, 24 inches wide and 24½ inches high.

Here's a bit of encouraging news for fueloil truck drivers. We're doing better behind the wheel. In 1958 trucks averaged 14 accidents per million miles. Just 10 years earlier the rate per million miles of truck travel was 45 accidents!

Blown or leaking exhaust manifold gaskets can give you real trouble. Try this. Before installing new gaskets, check for warping of the manifold. If dowel pins are used, the dowel pin holes should be increased in diameter to enable the manifold to expand and contract without buckling. Since, in some of the larger engines, the manifold increases in length as much as ⅛ inch from atmospheric temperature to operating temperature, the manifold simply has to slide or it will buckle.

Gasket life has been increased when the manifold face contacting the gasket has had liberal application of key graphite base. This can be obtained from any plumbing shop. The graphite creates a hard slate film with a very low co-efficient of friction, allowing the manifold to expand and contract easily. When installing the manifold, the center bolts should be tightest and the bolts toward either end progressively looser.

The National Safety Council, in its book "Five Minute Safety Talks for Driver Supervisors," urges you to be defensive—defensive against the acts of other drivers.

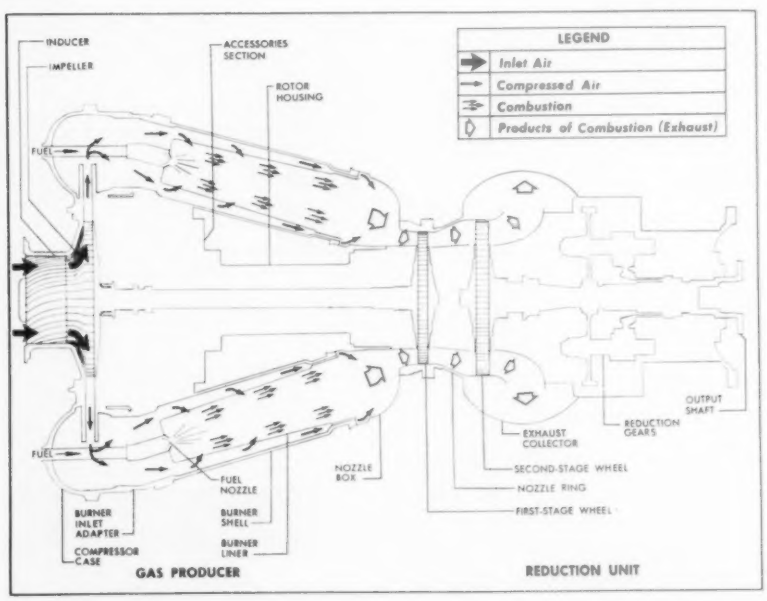
It's a fact that many drivers on the streets and highways should not be attempting to drive at all. But they do, and we must be ready for them. One type is the wise guy. He loads his jalopy with chrome and gadgets, fox tails and antennas. And he loves to "dig out" burning rubber for a block and cutting in and out of traffic.

Your defense against him is to recognize the type, give him plenty of room and hope he wrecks it far away.

The book talks about another common type—the guy who drives a rig that's battered and dented. He is advertising his ability to play crinkle fender. Give him plenty of room, too.

Turn signals can also give you trouble—if you always believe the joker who is blinking. He may signal left, and turn right—just as you're gunning past him in the right hand lane. The rule here is to watch for turn signals, hold back until the rig is fully committed and you know which way he is turning.

Also watch out for slow pokes. This one drives 35 when traffic is moving about 50. He stacks up a line of traffic behind him. If you're in the lineup, hold onto your professional good driver's button. Don't flip your union badge and try to pass. Also watch your rearview mirror to protect yourself from some guy who tries to pass and gets in trouble. And of course resist that temptation to pass the slowpoke yourself. Remember, Drive Defensively!



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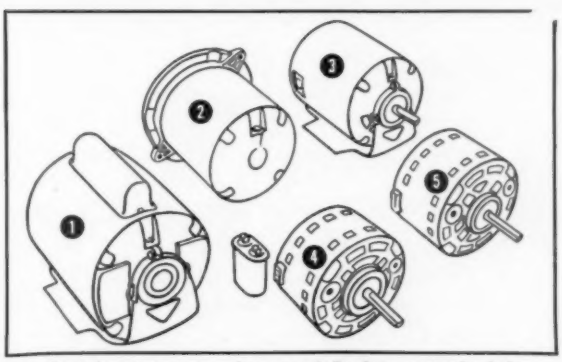

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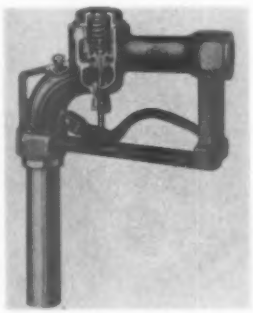
NEW PRODUCTS

OPW announces improved fueloil Nozzle and new ball bearing fueloil Swivel

OPW's 210 fueloil nozzle has been redesigned for the higher flow rates used on home deliveries; flow through the nozzle has been increased by 10%. A square hanger hook permits use in a vertical position even when the fill-pipe is close to a well. Also the 210 has larger wear lugs on the inlet and outlet ends to protect the nozzle when it is being reeled back to the truck. Features include dual poppets and built-in dash pot.

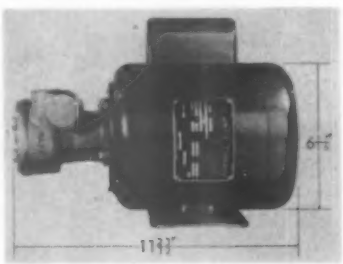


The No. 20 ball bearing swivel is used between the hose and nozzle to permit the hose to turn freely and assume its most tension-free position. Bearing unit is held in place by two snap rings.

Made by: OPW Corp., 2735 Colerain Ave., Cincinnati 25, Ohio.

Tuthill new pump and motor Combination develops capacities from 20 to 360 gph

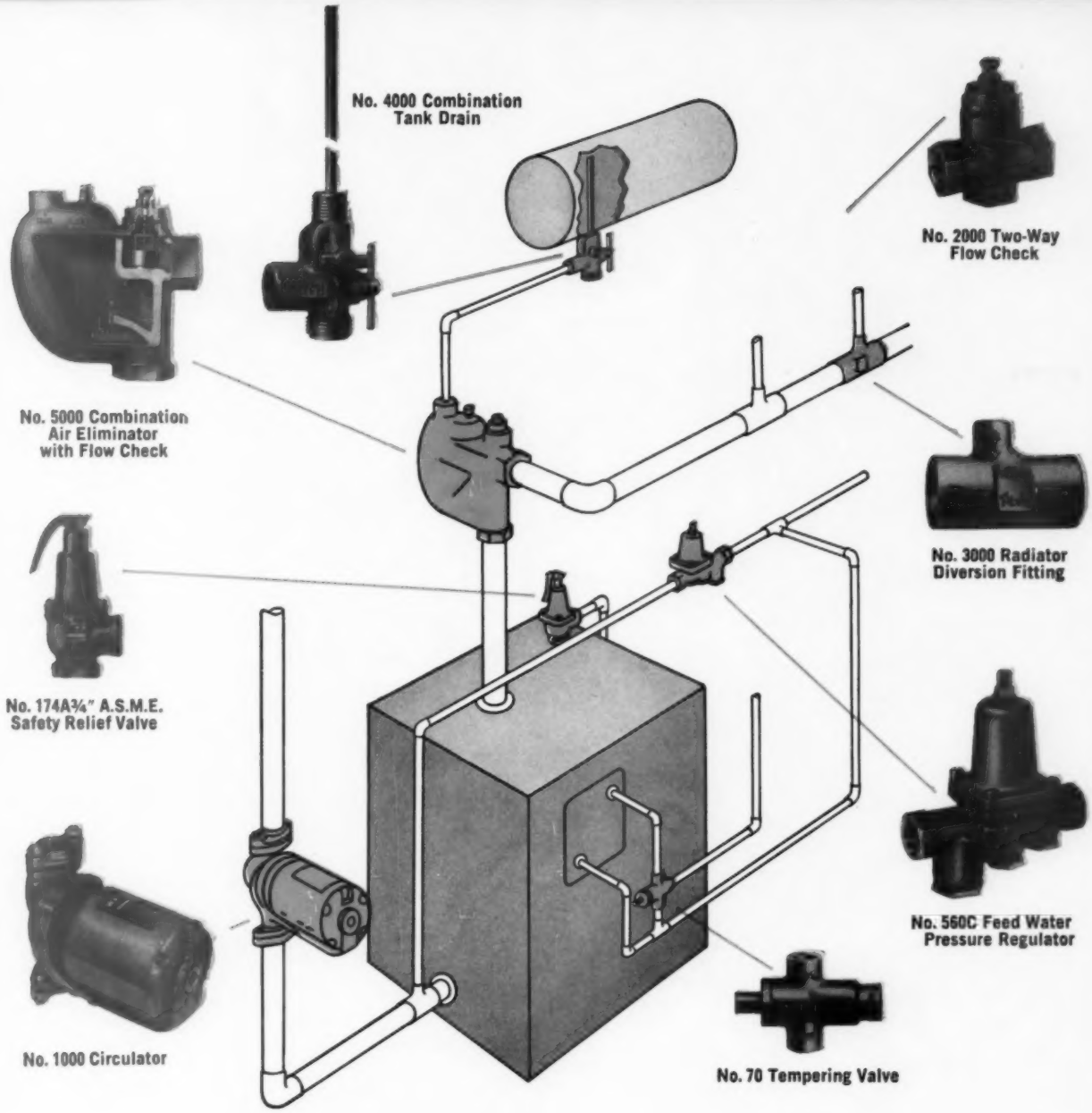
SERIES 56 Tuthill pump and motor combination is an addition to the line for use in oilburning, fuel transfer and other services.



The new series 56 has over-all dimensions of 6-11/16" by 11-23/32" and includes NEMA 56 series motors, ranging from ¼ to 1 hp in single or three phase. They may be combined with five different pumps with capacities from 20 to 360 gph.

Other Tuthill close-coupled units are supplied with measurements as low as 5" by 8⅝"; the complete range covers capacities from 20 to 50 gpm and requirements from 1½ to 7½ hp.

Made by: Tuthill Pump Co., 939 East 95th St., Chicago, Ill.



THE COMPLETE LINE OF WATTS HYDRONICS PRODUCTS DESIGNED AND MANUFACTURED BY

WATTS REGULATOR COMPANY

LAWRENCE, MASSACHUSETTS

With Representatives in Over 40 Cities from Coast to Coast

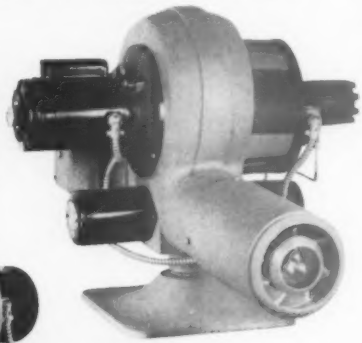
MOST
WANTED!
FOR TOP
QUALITY
PERFORMANCE

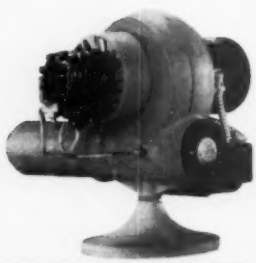
KORTH SHELL HEAD OIL BURNERS

Install it! Forget it!

Every Korth Oil Burner is guaranteed to give maximum life—years of efficient, dependable and trouble-free operation. Quality Controlled to the most rigid industrial standards . . . is your assurance of the finest heating equipment possible.
The Korth New Improved Shell Head design permits simplified air adjustments to be made externally—while burner is operating. This perfect air regulation results in a most accurate flame setting . . . eliminates unnecessary call-backs. Gain customers' full confidence and complete satisfaction. *Install it . . . adjust it . . . forget it!*

MODEL T-4:
10.0-20.0 GPH
Available with improved shell head—8.0 to 20.0 GPH. M-H electronic safety control system factory mounted and wired.





MODEL SR-SH-1: .75-1.65 GPH illustrated.
Equipped with improved shell combustion head. Other sizes and models up to 10.0 GPH also available to meet all requirements.

ALSO—A COMPLETE LINE OF OIL FIRED HOT WATER HEATERS.

GLASS LINED TANKS—30, 50, 70 GAL. SIZES.
COPPER TANKS—30, 45, 65 GAL. SIZES.
RECOVERY RATES FROM 120 TO 180 GPH.

5 YEAR GUARANTEE AND 5 YEAR WARRANTY ON GLASS LINED TANKS. (10 YEAR TOTAL COVERAGE).

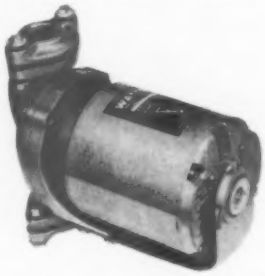
7½ YEAR GUARANTEE AND 7½ WARRANTY ON COPPER TANKS (15 YEAR TOTAL COVERAGE).

Investigate the advantages of Korth now . . . write For Complete Information Today!

ECKHART MFG. CO. INC.
UNION, NEW JERSEY

Watts introduces Circulator, completes hydronic Accessories

A QUIET AND COMPACT circulator for forced hot water heating systems, joins other Watts hydronic accessories and related items to make up its complete line.



Type 1000 circulator has its impeller attached directly to the motor shaft; there's no pump bearing bracket assembly, separate shaft or coupling. The circulator measures 11¼" long by 9¼" high. The pump requires no lubrication during its first operating year and can be furnished with ¾", 1", 1¼" or 1½" companion flange sizes. Has a ½ hp dynamically-balanced motor.

Made by: Watts Regulator Co., Lawrence, Mass.

Royal automatic Humidifier has no Motor, no Wiring, no Drain

MOIST-AIRE is an automatic humidifier by Royal Manufacturing which starts when the furnace blower goes into operation. It has no motor, no humidistat, no wiring and no drain. The water wheel is actuated by forced air. Tips of the wheel pick up water from the pan, throw it against an inclined roof plate and then the water runs down over evaporators.

Made by: Royal Manufacturing Co., 622 Washington Blvd., Royal Oak, Mich.

Parke-Hill's soot Remover is applied to Boilers with an industrial Sprayer

A SOOT REMOVER by Parke-Hill Chemical Corp. is called Liquid Soot-Ban. The chemical is applied to the heating plant with an industrial sprayer. It adheres to the soot on vertical as well as horizontal surfaces. It lowers the combustion point of the carbon to the point where it burns away rapidly when ignited with a paper torch.

Made by: Parke-Hill Chemical Corp., 29 Bertel Ave., Mount Vernon, N. Y.

Correction

THE OILIFTER wall pump described in the May 1960 issue on page 92 was erroneously referred to in the headline as a product of General Controls. It is made by Controls Company of America, Heating and Air Conditioning Controls Division, Milwaukee 45, Wis.

OIL FIRED WARM AIR SYSTEMS From reliable primaries to fashionable room thermostats – call on General Controls. *Single source responsibility* for quality controls means easier ordering, faster deliveries, fewer call-backs. You get local warehouse stocks... field service from 44 Factory Branch Offices. Send today for HEATING CONTROLS CATALOG describing the complete line of compatible controls for oil or gas-fired, warm air or hydronic systems.

BE QUALITY SURE...ALWAYS SPECIFY GENERAL CONTROLS

GENERAL CONTROLS

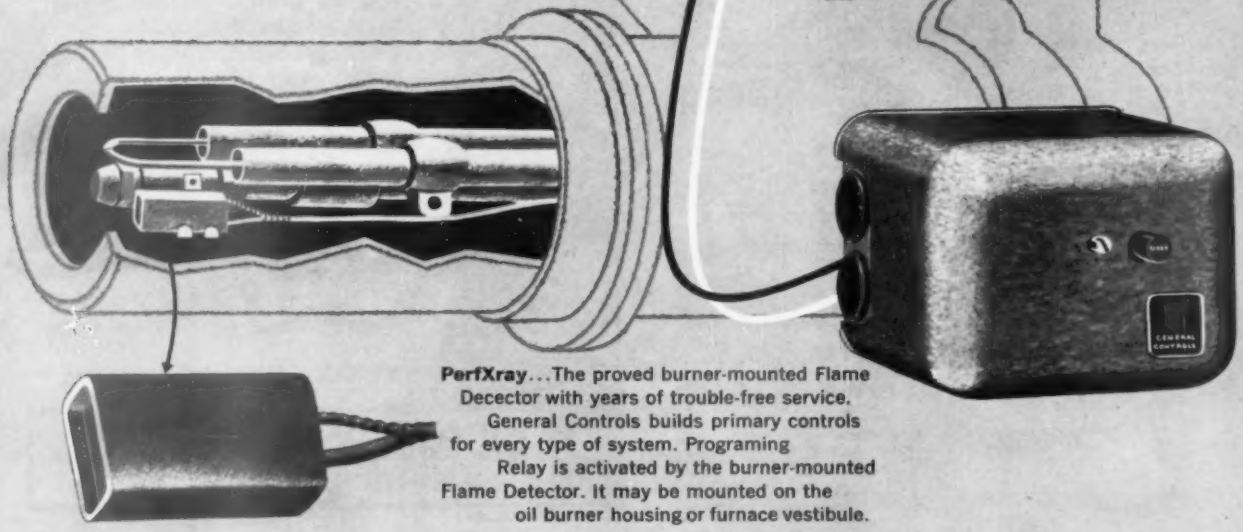
Automatic Controls for Product or Process

Glendale, Calif. • Skokie, Ill. • Guelph, Ontario, Canada

Nine plants—44 factory branch offices serving the U. S., Canada and Western Europe

The new "Decor" round thermostat. There's a General Controls thermostat for every system.

Fail safe Fan and Limit control. Everything you need is in General Controls line of limit controls.



PerfXray...The proved burner-mounted Flame Decector with years of trouble-free service. General Controls builds primary controls for every type of system. Programing Relay is activated by the burner-mounted Flame Detector. It may be mounted on the oil burner housing or furnace vestibule.

Airtemp's horizontal Airconditioner for inside or outdoor Installation

AIRTEMP'S MODEL 1104-00, with a 35,000 Btu/hr capacity can be installed either indoors or out. The cabinet measures 45-15/16" wide, 39⅞" deep, 20⅜" high. A small panel in the shell allows quick field wiring; on-the-spot service is accomplished by removing the top or side panels.

Removal of nine bolts divides the blower and refrigeration sections into two packages for easy passage through tight access.

The model uses two blowers, is spring-mounted and has a reset switch on the thermostat.

Made by: Chrysler Airtemp, Dayton 1, Ohio.

Dodge thread seal Tape is applied to Pipe; prevents rusting Threads

A THREAD seal tape by Dodge is made of Teflon. It is applied directly to pipe threads and is not affected by acids, gases, steam, atmospheric conditions, high or low temperatures. The tape prevents threads from rusting or corroding together.

Made by: Dodge Fibers Corp., Hoosick Falls, N. Y.

stainless steel

- for longer life
- easier installation
- greater sales appeal

Vaporite AUTOMATIC HUMIDIFIER

PRECISION BUILT TO AVOID COSTLY "CALLBACKS"

NEW COMPLETELY STAINLESS

MODEL 999

For any straight side warm air furnace

- Water leveling type
- New diaphragm design
- Only 4 lbs completely assembled . . less than 3¾-lb. strain on bonnet metal or plenum wall

2 GREAT TIME-PROVED THERMOSTATIC CONTROL MODELS

STAINLESS STEEL PAN . . .

heats more quickly . . . vaporizes water faster . . . resists chemical action of hard water . . . lasts far longer

SERIES 555C

For any straight side warm air furnace

SERIES 577

For slanting or straight side warm air furnace

AUTOMATIC DRIP-FEED VAPORIZATION

Thermostatically controlled valve admits water to vapor pan in carefully measured amount for balanced humidity

PROVED BY 20 YEARS OF USE IN THE MIDWEST . . . heart of the warm air industry

WRITE FOR FREE LITERATURE

AUTOMATIC HUMIDIFIER CO.

CEDAR FALLS, IOWA

Manufacturers since 1925 of a Complete Line of Automatic Humidifiers for Warm Air Furnaces

KING FILL ALARMS

Fig. No. 700

Fig. No. 500

CHOOSE KING FILL ALARMS

with NEW Improved Type "R" Whistles

YOUR BEST BET

With today's accent on higher pumping speeds...faster deliveries, you're miles ahead with KING FILL ALARMS. They have proven superior in thousands of installations from coast to coast.

Here's why:

- Whistle signal is distinct . . . Unfailing...sounds off while tank is filling — stops when oil reading reaches capacity level.
- Comes in three models: 16 sizes — there's a King Fill Alarm for every need.

WRITE FOR DESCRIPTIVE LITERATURE

OIL EQUIPMENT MFG. CORP.

169 DERBY AVE. NEW HAVEN, CONNECTICUT

In close quarters or open countryside—in good weather or bad—fuel oil dealers depend on N Model Macks for the on-schedule deliveries that mean customer satisfaction.

MACK for over 7 straight years NO.1 by far in sales of diesel trucks

All-round dependability makes Mack

No. 1 for modern fuel oil handling

"When on-schedule deliveries mean satisfied customers, you're glad you have Macks on the job," says James J. Gillin, Jr., Vice President of Philadelphia's *Petroleum Heat and Power Company*, largest independent fuel oil distributor in the Delaware Valley. "There are good reasons why we've used Macks for years for fuel oil handling. Outstanding dependability is one. Low operating cost is another. And there are many more—not the least of which is the ability to deliver top-capacity loads day after day with negligible downtime."

Traffic Manager Joseph McCluskey, who keeps an 80-truck fleet running smoothly despite tight schedules and all-weather operations, uses Mack B Model tractors for long-haul tanker runs from refinery and bulk plant and N Model compact cab-forward trucks for retail deliveries. Each model is the finest of its class—pays off in more miles of use, at lowest cost per mile.

Whatever *your* hauling job—wherever you do it—the sooner you put Macks to work, the sooner you'll start to realize the tremendous profit potential of their bonus cargo capacity . . . their swift mobility in congested areas . . . their strength, stamina and dependability. Check your Mack branch or distributor for full details on the Mack best suited to your requirements. Mack Trucks, Inc., Plainfield, New Jersey. Mack Trucks of Canada, Ltd., Toronto, Ontario.

7718

MACK
FIRST NAME FOR
TRUCKS

SEL

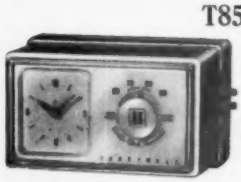
New T86 Honeywell Round

New picture-window dial, new eye-saving numerals, new diamond-lustre finish make it easier to read, easier to set, easier-than-ever to sell. And the new comfort-zone thermometer is separated from the temperature dial to reduce nuisance service calls when pointers temporarily do not match. For heating only. Also available as the T87 Year-Round Thermostat for heating-cooling applications.

T832 Day-Nite Round

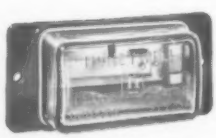
This thermostat offers manual set-back for lower economical temperatures—day or night—and automatic temperature pick-up. Cooling can easily be controlled with the same thermostat. Features a dust-free mercury switch and anticipation.

T852 Electric Clock Thermostat



Automatically lowers temperatures at night and raises them again in the morning. For heating-cooling jobs, install Model T861 with subbase. If cooling is to be added later, install the T861 now, the subbase for cooling.

New Indoor-Outdoor Control System



T846A Outdoor Thermostat is mounted outside to sense changes in wind, sun and temperature. When the outside temperature drops, it automatically resets the indoor thermostat upward to compensate for the change.

T855A Indoor Thermostat features a reset heater that automatically responds to the signal from the Outdoor Thermostat. The Indoor-Outdoor Control System is simple to install and wire; uses the same basic hook-up as ordinary Series 80, two-wire control systems.

ECT

SELECT from a complete line of the world's most wanted thermostats

Honeywell makes all kinds of thermostats for all types of heating and cooling equipment control. You're sure to find the right thermostat for every job. And you can offer your customers their choice of manual, semiautomatic or completely automatic heating and cooling. You profit in many ways when you handle Honeywell's complete line of controls—easier installations, simplified inventories, expert field training for your crew. And Honeywell backs its products with fast help when you need it. There are 112 sales and service offices across the nation as close as your telephone.

LEARN MORE ABOUT CONTROLS IN A HONEYWELL SERVICE SCHOOL
Over 100,000 dealers and servicemen attend Honeywell Control Schools annually —in their own city or area. Ask the Honeywell man nearest you for more information.

For information about Honeywell's complete line of control systems for heating and cooling, call your local Honeywell office. Or write Honeywell, Dept. FH-7-107, Minneapolis 8, Minnesota.

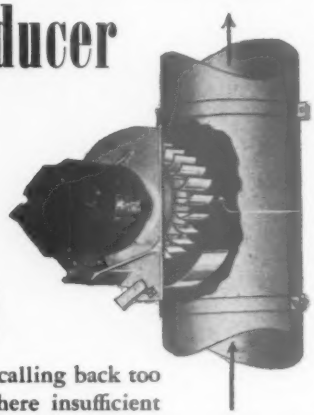
Honeywell

H HONEYWELL *First in Control* SINCE 1885

75th YEAR PIONEERING THE FUTURE

fueloil & oilheat

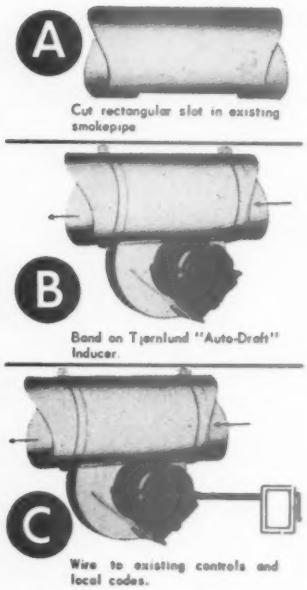
TJERNLUND "Auto-Draft" Inducer



Solves Your Problem Draft Jobs!

CHANCES ARE, you're calling back too often on certain jobs where insufficient and unstable draft is causing smoke, noisy starts, and basement sooting. You'll completely eliminate these unnecessary service calls, and make additional profits, when you *Guarantee Draft with "Auto-Draft".*

Simple as A-B-C to Install!



Only TJERNLUND has all these Features:

- Heavy Duty construction.
- Nationally known motor.
- Light weight.
- Quiet Operation.
- Built for years of service.
- Venturi-type operation.
- Doesn't rob furnace room of combustion air.
- Uses minimum smoke pipe length for mounting.

At your Jobber, or Write:

TJERNLUND MFG. CO.
2140 Kasota Ave., St. Paul 8, Minn.

Moncrief announces three new oilfired horizontal Furnaces

IMPROVED Moncrief oil horizontal furnaces have been announced, featuring low, slender design to facilitate installation in attic or crawl space. No. OY-60-E has an input capacity of 89,600 Btu; OY-106-E has an output capacity of 106,400 Btu and OY-124-E has an output rating of 224,000 Btu. Dimensions, in the same order are 20" high and 20" deep; 25" by 25" and 26" by 26".

All feature increased air handling capacity to permit the addition of summer airconditioning cooling coils. The smallest unit will handle up to 3 tons of cooling, the medium unit up to 4 and the largest up to 5 tons.

Made by: The Henry Furnace Co., Medina, Ohio.

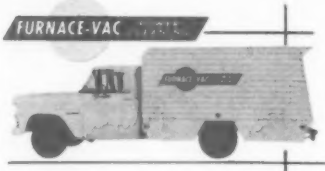
Ridge Tool tubing Cutters have enclosed Feed to avoid jamming

TWO RIDGID tubing cutters by Ridge Tool Co. feature fully enclosed feed screws that can't jam with chips or dirt. Each carries a spare cutter wheel in the handle. The cutters are made of cast aluminum alloy and can be used on copper, brass, aluminum tubing and thin-wall conduit.

Made by: Ridge Tool Co., Elyria, O.

GET YOUR SHARE of the PROFITS!

POWER VACUUM CLEANING



Furnace Vac Custom Deluxe Power Cleaner Mounted on 1-Ton Dual Wheel Truck.

Trailer Mounted Deco Vac Power Cleaner — Suitable For Mounting on ½-Ton or Larger Truck.

INVESTIGATE

THERE IS A PLACE FOR ONE OF THESE PROFIT MAKING CLEANERS IN YOUR ORGANIZATION

WRITE - WIRE - OR PHONE FOR DESCRIPTIVE LITERATURE AND PRICES

PRODUCTS OF

DECO MANUFACTURING CO.
903 22ND STREET - ROCKFORD, ILLINOIS
A DIVISION OF DELAMATER EQUIPMENT CO.

New finger-tip controlled, high pressure nozzle cuts delivery time, eliminates closing shock and leakage

FOR FUEL OIL DELIVERY:
1¼ in.—AA 4177
1½ in.—AA 4161

ALUMINUM SWIVEL
1¼ in.—AA 4188-125
1½ in.—AA 4188-150

Order your trial nozzle by number

FOR AIRCRAFT SERVICING:
1½ in.—AA 4171-5
2 in.—AA 4158-5

Order your trial nozzle by number

Balanced action of new lightweight aluminum nozzle permits opening against 150 psi pressure with only one finger, is adjustable to various closing speeds without removing the nozzle from the hose, provides shockfree and leakproof closing under all operating conditions. Full streamlined area at all points offers unrestricted rate of flow under all operating pressures. And new lightweight aluminum swivel with nylon bearings can be supplied to eliminate kinks, twists or damaging tensions on the hose.

Take advantage of this introductory offer! Try one of the new nozzles for two weeks. If you are not entirely satisfied with its operation, return it for full credit or refund.

PHILADELPHIA VALVE COMPANY

ARAMINGO AVENUE AND EAST TIOGA STREET, PHILADELPHIA 34, PA.

DISTRIBUTORS

NORTHEASTERN PETROLEUM SERVICE & SUPPLY, INC., 37 BROOKLEY ROAD, JAMAICA PLAIN 30, MASS. • OIL MARKETING EQUIPMENT COMPANY, 325 FREMONT STREET, SAN FRANCISCO 5, CALIF. • HOWARD SUPPLY COMPANY, 5125 SANTA FE AVENUE, LOS ANGELES 11, CALIF.

Thrush 3″ horizontal in-line Pumps for big liquid heating-cooling Jobs

THRUSH RC-1 and RC-2, 3″ horizontal in-line pumps have been developed for large hot water heating or cooling installations. Pump bearings have a double spiral groove to flow oil continually around the shaft, without mechanical oil seals. The pumps feature a "barrel-spring" coupling, with a heavy thrust collar to prevent diving action; impellers are carefully balanced to insure vibration-free performance.

RC-1 has a ½ hp motor and develops a maximum head pressure of 23 ft. of water; RC-2 has a ¾ hp motor with 30 ft. maximum head pressure.

Made by: H. A. Thrush & Co., Peru, Ind.

Duct insulation Glue now sold separately by Grant Wilson

AN ADHESIVE, Dux-Sul-Glue, formerly included in packages of Dux-Sulation, is now being sold separately by Grant Wilson, Inc. The controlled tack-range of the insulation adhesive makes it suitable for any practical application and permits use with either brush or scraper blade. It is non-flammable. One gallon covers about 200 sq. ft. and forms bond of insulating materials to sheet metal.

Made by: Grant Wilson, Inc., 141 W. Jackson Blvd., Chicago 4, Ill.

WHISTLER
Model E, the only whistle you can install without disturbing the present piping. Model D for new installations.
APPLIED MECHANICS COMPANY
381-389 CONGRESS ST., BOSTON 10, MASS.

MORE THAN 30 TIMES

the 100,000 people watching this game is the number of B&G BOOSTERS now in dependable operation

United Press Photo

B&G Boosters are precision-manufactured throughout. Here extremely accurate grinders maintain Booster shaft dimensions within .0005 inch limits.

Over 3,000,000 Boosters are in service today...clinching evidence that their superior quality and performance has never been challenged.

The reasons why B&G Boosters so completely dominate the heating market are not hard to find. Above all they are *quiet—vibrationless*...the prime essential of a forced hot water circulating pump. They are dependable and *profitable* —not a cause of endless service calls and dissatisfied customers. Sound design and sturdy construction of best materials assures faithful performance for years.

B&G Boosters are produced by a manufacturer who stands back of his product—who offers help in any problem of design or installation—and whose nation-wide distributors maintain adequate stocks to serve your needs.

BELL & GOSSETT

COMPANY

Dept. GG-7, Morton Grove, Illinois

Canadian Licensee: S. A. Armstrong, Ltd., 1400 O'Connor Drive, Toronto 16, Ontario

fuel oil & oil heat

Carborundum has developed fiber Material for combustion Chambers

FIBERFRAX PAPER about 1/8" thick inserted into a mild steel shell has been developed by Carborundum as a combustion chamber lining for boiler or furnace-burner units. The FIBERFRAX paper has been used extensively as standard high temperature industrial furnace insulation.

It can be stamped or cut to the desired shape and being flexible can be rolled up for installation through the top of the chamber or the burner hole. After installation, the liner is covered with a thin coating of FIBERFRAX blue coating-cement to increase structural support and resistance to coke-free formation. The material withstands temperatures up to 2300° F.

The resultant combustion chamber is said to heat up quickly to incandescense and cool down rapidly. The 1/8" thickness of the material permits heat transfer to the metal shell. In a furnace installation, directing forced air around the combustion chamber shell, makes the chamber the primary heat exchange area.

Another advantage is the sound absorption of the fibers that make up the material. Also, the chamber is lighter.

The FIBERFRAX paper has been tested and listed by Underwriters' Laboratories as a "Component refractory liner material" under guide number 167E90-C, dated May 5, 1958, MH 7030.

Made by: Ceramic Fiber Project, The Carborundum Co., P. O. Box 337, Niagara Falls, N. Y.

AIR-EASE

BASEMENT UNITS

GAS FIRED (4 SIZES)
100, 125, 160 and 200 thousand BTU per hr. input.

OIL FIRED (4 SIZES)
.72, 1.0, 1.25 and 1.6 gal. per hr. firing rate.

HI-BOY UNITS

GAS FIRED (4 SIZES)
60, 80, 100 and 125 thousand BTU per hr. input.

OIL FIRED (3 SIZES)
.65, .75 and 1.0 gal. per hr. firing rate.
Return Air Cabinets available for basement installations.

COUNTERFLOW UNITS

GAS FIRED (3 SIZES)
80, 100 and 125 thousand BTU per hr. input.

OIL FIRED (3 SIZES)
.65, .75 and 1.0 gal. per hr. firing rate.
Base for installation on combustible floor available.

HORIZONTAL UNITS

GAS FIRED (5 SIZES)
70, 85, 100, 120 and 140 thousand BTU per hr. input.

BLOWER FILTER UNITS (2 SIZES)
10" and 12" Blowers.

CHOICE: of Minneapolis-Honeywell Top Controls or Standard Controls on all units.

CHOICE: of Belt or Direct Drive Blower on all units 100,000 BTU or smaller.

ALL UNITS COMPLETELY ASSEMBLED AND COMPLETELY WIRED AT THE FACTORY.

ALL UNITS AVAILABLE AS HEATING AND COOLING COMBINATION UNITS.

COOLING (AIR COOLED CONDENSERS) 4 SIZES
2, 3, 4 and 5 ton capacities.
"A" type coil for vertical air flow.
"H" type coil for horizontal air flow.

WRITE . . . . . *. . . for information and name of nearest distributor*

7-O

AIR-EASE

THE JOHNSON FURNACE COMPANY
2129 WEST 117th STREET, CLEVELAND 11, OHIO

FIRST in QUALITY and POPULARITY!

floret
AIR VELOCITY INDICATOR

Takes guesswork out of checking the operation of forced air heating, cooling and ventilating installations. Use it to:

- Check air flow at registers, grilles, diffusers, convectors.
- Spot objectionable air movements in rooms.
- Detect leaks around doors and windows.
- Check air flow in display cases, reach-in refrigerators, walk-in coolers, etc.

$12.90
FACTORY NET

The ideal pocket-size air velocity indicator; direct-reading; can be used for checking air flow through openings as small as 1/8" in diameter. Range 0-1000 ft./min. Supplied with pocket case.

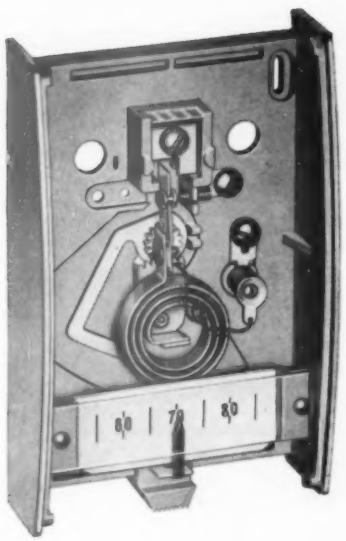
BACHARACH INDUSTRIAL INSTRUMENT CO.
200 N. BRADDOCK AVE. • PITTSBURGH 8, PA.

RUSH details on FLORET Air Velocity Indicator to

NAME _____
COMPANY _____
STREET ADDRESS _____
CITY & STATE _____

F-29

NOW...



Type 820 low voltage, heat anticipating thermostat with easy-to-read slide-set dial and separate thermometer scale. Need not be leveled . . . is easy to mount and wire . . . simple to adjust.

A TRIM, THIN-LINE ROOM THERMOSTAT

with PENN "dependable quality"

Here's a new heating thermostat . . . superbly styled in neutral beige and brown to complement any interior . . . with more features that make it easy-to-sell, easy-to-use!

Your customers will like especially the large easy-to-read thermometer and setting scales, separated for clarity . . . the easy-to-adjust sliding selector . . . and the slim contemporary design that goes with any decor.

You'll like the time-tested mechanism with positive snap-acting contacts that can't chatter to cause vibration complaints . . . the one piece installation that requires no mounting bracket — no leveling . . . and the simple, positive ring-type heat anticipator.

And, the new Penn Type 820 does an outstanding job of control . . . responding rapidly to any temperature change . . . holding temperature within a fraction of a degree of selected level . . . giving the accurate, dependable service you've come to expect from Penn controls.

PENN CONTROLS, INC. Goshen, Indiana

EXPORT DIVISION: 27 E. 38th ST., NEW YORK, N.Y.

AUTOMATIC CONTROLS FOR HEATING, REFRIGERATION, AIR CONDITIONING, APPLIANCES, PUMPS, AIR COMPRESSORS, ENGINES

Here's why *Sentry*
AT-A-GLANCE
TANK GAUGES
are tops in sales and performance

1 ACCURATE, DIRECT READING — Red indicator and large, non-fogging calibrated scale provides clear, visible reading from any angle.

2 HEAVY DUTY CONSTRUCTION — Non-leakable double wall dome secured to die-cast, non-corrosive zinc base assembly. Withstands 70 lb. air pressure per sq. inch. Fully guaranteed.

3 FOOL-PROOF MECHANISM — Simplified lever-type action. No magnets, gears, cams or springs to wear out. Non-corrosive thruout.

4 PROTECTED CORK FLOAT — Triple coated with phenolic base Bakelite. Absorption-proof. Resists oils, alcohol and other chemicals.

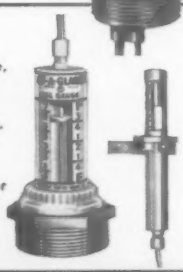
EASY TO INSTALL — Install quickly and easily, even in partially filled tanks.

5 FITS ALL TANKS — Factory adjusted to fit all tanks up to 12' deep with standard openings of 2" (Model D-2) or 1½" (Model D-1½).

Fastest selling in the industry, Sentry AT-A-GLANCE gauges are recognized for their superior qualities of accurate measuring, clear visible reading, rugged but simplified construction and long-life durability. They are fully guaranteed and "listed as standard" by Underwriter's Laboratories. Complete Literature, Sales Brochures and Counter Displays available.

SENTRY Superior Quality THERMA-GAUGE
Similar to the standard AT-A-GLANCE gauge above, but features a solid red thermometer type indicator and a two-piece die cast plug-nut assembly which permits simplified tank installation.

STOVE AND SPACE HEATER GAUGES
Several models with accurate, easy-to-read indicators to fit all tanks. Also models for small tanks such as power mowers and outboard motors.



REMOTE READING TANK GAUGES
Several models for outdoor reading of levels in tanks indoors, underground or at delivery fill pipe.

KRUEGER *Sentry* GAUGES
GREEN BAY • WISCONSIN

Penn introduces fan-limit Control with loss of charge Protection

PENN SERIES 530 combination fan and limit controls are compact, measuring 2-7/32" by 3-5/32" by 5-27/64". The controls incorporate two separate switching units, each independent of the other. Both are operated by a single liquid-charged temperature element.

The Series 530 features a loss of charge protection, whereby the safety limit switch will open to prevent heating unit operation if the element should lose its charge. Models include those with window in cover, adjustable differential on the fan switch and summer fan selector switch.

Made by: Penn Controls, Inc., Goshen, Ind.

Utica Radiator's Donobilt Boiler is factory-packaged hot water unit

"DONOBILT" hot water boiler, announced by Utica Radiator, is an oilfired unit, I-B-R tested and rated at 83,300 net Btu. It is completely factory-assembled, tested and crated with jacket, burner, refractory, circulator, tankless heater, controls and wiring harness.

It features free-floating cast-iron sections with no top nipple, a flue gas transistor to permit smooth burner starts with low chimneys, table-top height.

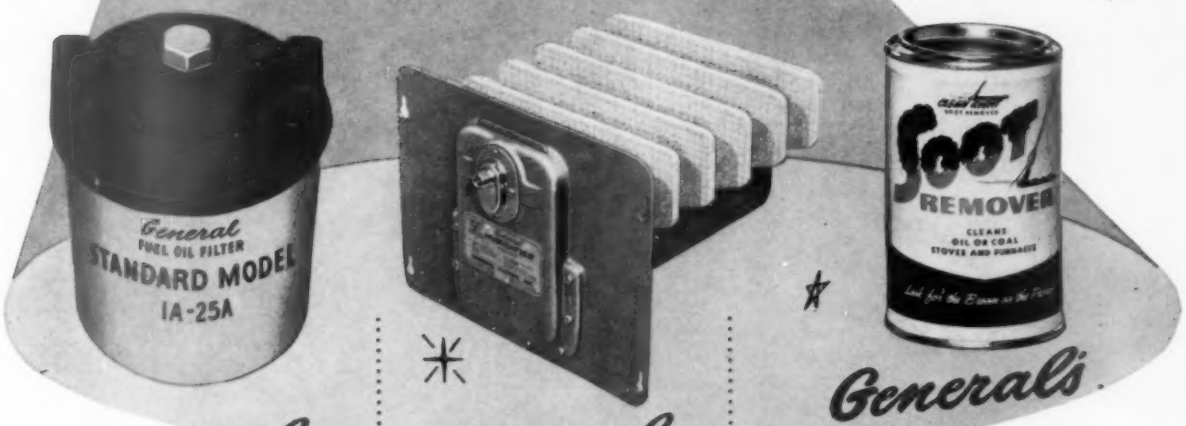
Made by: Utica Radiator Corp., 2320 Dwyer Ave., Utica, N. Y.

CORRECT
CROMWELL'S Fuel Oil Dealer Forms: Budget Envelopes, Meter Tickets, Invoices . . . make record-keeping accurate and easy. Imprinted with your name, fast delivery, free catalog.
cromwell printery inc.
CHURCH AT BLEECKER, ALBANY, N. Y.

SCENE STEALERS

on the PROFIT STAGE of BUSINESS

• It's the *added* profit, the *increased* dollar volume that makes your business prosperous—that makes life worth living! General Filters products can help you—in a BIG way! Every heating plant service call you make is an opportunity to either *install* new units or *renew* efficiency with General Filters products. When you look at your sparkling monthly profits column you will find GF products are the best scene stealers you have ever seen. They give a stellar performance every time—*all* the time!



Generals

General FILTER

- Lifetime cast iron and steel construction protected with rust resistant plastic coating.
- Wool felt cartridges (replaceable) —trap moisture, dirt, lint; prevent nozzle clogging, gumming.
- Wool felt element cleaned and bonded to center mesh core.
- Two sizes fit all plants—

General "Moisture-Matic" 800 HUMIDIFIER

- Lifetime neoprene diaphragm.
- No float to stick, clog, or rust.
- Corrosion-proof molded pan.
- Chrome-plated valve.
- Holds up to 15 "Porous Weave" (replaceable) plates.
- 1 year guarantee on parts.
- Installs in 30 minutes (average time).

CLEAN RIGHT Soot Remover

- Saves up to 25% in heating costs in a single heating season!
- Works in every type heating plant—oil, coal, gas, wood.
- Fast acting! Consumes a ½" layer of soot in 2 to 5 minutes.
- Safe! No flash, no flare, no intense heat.
- Non-corrosive; won't harm burner parts!
- Light, powdery—can be sprayed or "spooned" into chambers and flues.
- Use on every call; sell to customers.

Member Humidifier Association

Ask Your Jobber for these **GF** Products

GF PRODUCTS **GENERAL FILTERS, Inc.** 43800 Grand River Avenue NOVI, MICHIGAN

IN CANADA: Canadian General Filters, Ltd., 39 Crockford Blvd., Scarborough, Ont.

Philadelphia Oil Heat Council expands advertising Program

THE ADVERTISING PROGRAM sponsored by the Oil Heat Council of Philadelphia was expanded and amplified during the recent months.

Additional time was taken on radio with themes stressing conversion and modernization, summer conditioning, oil powered domestic hot water systems, and the new home and builder market. The name of every authorized "Little Bill" dealer was mentioned on the five stations approximately 4.5 times a week.

The Council is preparing a "Little Bill" kit with dealer aids and methods for exploiting and capitalizing on the use of the name and character.

In addition, the Council will have a mobile display for use in bank and hotel lobbies, building and loan association offices, and various other public gathering places.

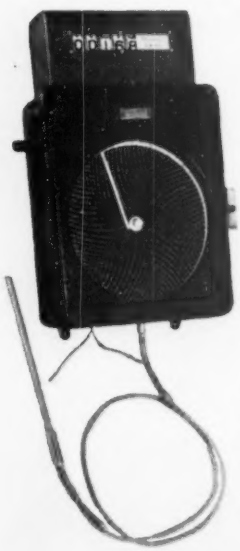
the

Hidy Degree-Day Recorder...

the leading degree day recorder on the market

Gives You:

- **A way to guarantee that your customers will never run out of fuel.**
- **30% savings on your trucking and bookkeeping costs through better scheduling and elimination of run-outs.**
- **Accurate measurement of *every* measurable element effecting degree-day count, even in highly variable spring and fall weather.**
- **Easiest installation, most trouble-free operation of any degree-day recorder on the market.***
- **A constant K-Factor.**



We stand behind our recorders and the claims we make for them. *We will give $1000.00 to any individual who first brings us acceptable proof that any other Degree-Day Recorder now on the market is more accurate, easier to install and simpler to maintain than the Hidy Degree-Day Recorder. The Hidy Recorder is available either for lease at $95.00 yearly or for sale. Also . . . advertising mats to help you sell your customers.

Write or wire for booklet—"You Need A Hidy" —and please advise whether you're now using a degree-day system. (Some territories still available for top-flight representatives.)

Hidy - Brown Recorder Co.

6988 Five Mile Road Cincinnati 30, Ohio

Tidewater oilheating Group elects Thomas new President

VINCENT J. THOMAS, Johns Bros., Inc., has been elected president of the Tidewater Oil Heat Association. He succeeds Corbin B. White.

Other officers of the group which covers Norfolk, Portsmouth, Virginia Beach and South Norfolk, Va., are J. W. White III, vice president; Raymond Smith, secretary; and G. W. Dailey, treasurer.

Directors are G. A. Downs, E. L. Fentress, J. J. Hassell, Jr., Charles E. Russell, Roy P. Henderson, E. S. Horner, Sr., F. S. McCoy, Edward J. Shul, and Corbin B. White.

Thomas S. Ellis, Jr., is now executive vice-president—a newly-created position, following the retirement of C. A. Mowry, executive secretary of the group. The Association now has offices at 5000 Colley Ave., Norfolk.

Bohlen re-elected President of Ohio Petroleum Marketers

OFFICERS and directors were re-elected by the Ohio Petroleum Marketers Association at the recent annual meeting in Columbus.

President is Sam Bohlen, Orrville; Elmo D. Hidy, Cincinnati, vice-president; Clyde E. Wallingford, Columbus, is executive secretary-treasurer.

Directors are Cloyce K. Aller, Findlay; Ray L. Burke, Sidney; Charles H. Miller, Zanesville; and Ernest G. Vorwerk, Napoleon.

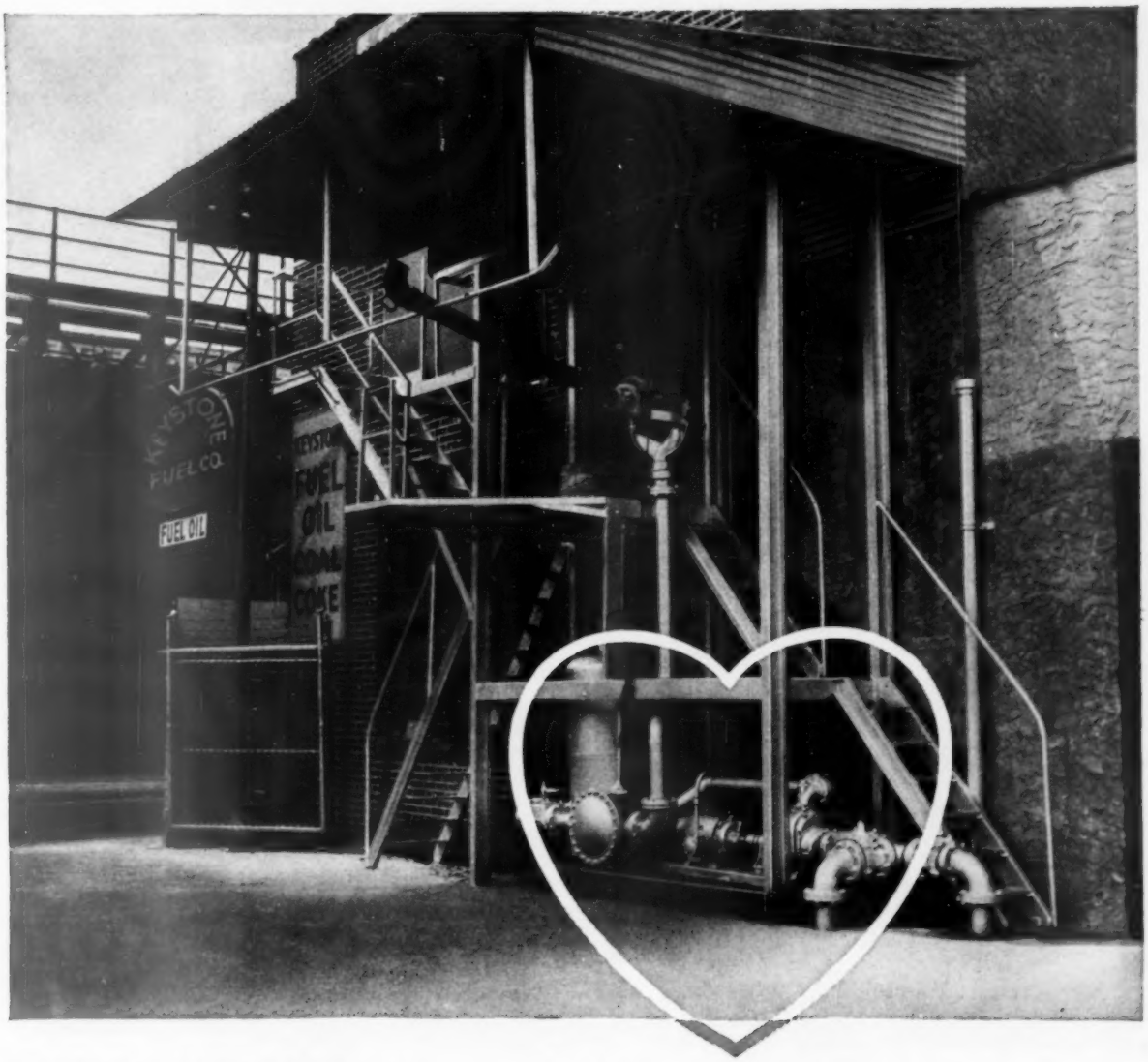
Water Heater design Standards set by Manufacturers Group

THE FUEL OIL & Water Heater Manufacturers Association at a recent meeting adopted recommended thermal and mechanical design standards. The standards cover: below water line fueloil heaters; instantaneous water heaters and converters, steam converters, converter and heat exchangers.

Members of the association are Davis Engineering, General Fittings, Manning & Lewis, Patterson-Kelley, Richmond Engineering, Taco Heaters, Uba Heat Transfer, Yula Corp. and Water Tube Boiler & Tank Co.

Executive secretary is Edward R. K. Fiencke, New York.

THE **HEART** OF ANY BULK PLANT OPERATION...
IS THE **PUMP** THAT SPEEDS DELIVERIES, ***DEPENDABLY!***



KEYSTONE *cuts delivery time over 60% with* MARLOW!

Keystone Oil Company operates six, 60,000-gallon-capacity bulk plants that serve the Philadelphia area with #2 fuel oil. At the firm's Front & Berks Street Plant they recently replaced an old positive displacement pump with a Marlow, 32 HELP-13 to more than double loading rates. This makes it possible for them to keep pace with their home fuel oil delivery trucks which are Marlow equipped. Marlow 2C2G's on the trucks more than doubled their delivery rates. The equipment was sold by E. O. Habhegger Co. of Philadelphia.

If you are modernizing a present plant or planning a new one, look to Marlow for the solution to your petroleum pumping problems. Marlow builds a complete range of pumps for bulk plants, home delivery trucks, and transports. Write today for Bulletin PM-06 and the name of your Marlow dealer. 9-313

Marlow PUMPS®

MARLOW PUMPS®

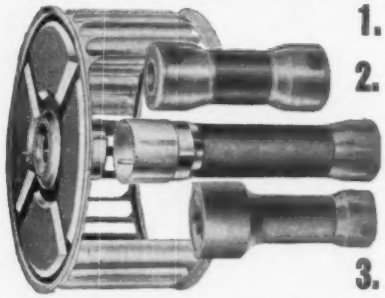
DIVISION OF BELL & GOSSETT COMPANY

MIDLAND PARK, NEW JERSEY

Morton Grove, Illinois • Longview, Texas

fueloil & oilheat

Guardian —
YOUR BEST SOURCE FOR
ALL TYPES OF FLEXIBLE COUPLINGS



1. Set Screw Type **2.** Splined Type **3.** Jaw Type

Only Guardian gives you these features—

- ROLL SPINNING — Exclusive process joins all three components at one time — while in final operating alignment.
- BRAIDED RUBBER—Ground to absolve true concentricity. Furnished in BUNA-N TUBE and NEOPRENE COVER. Lateral and angular alignment requirements fully met.
- ONE-PIECE DESIGN — Minimizes assembly and handling costs. Made to exact lengths required.

Over 6,000,000 Guardian couplings are on original equipment. This is your assurance of highest quality and universal acceptance in the field.

Write for free descriptive literature covering couplings, service men's coupling kits, oil valves and Quik Joint compression fittings.

Guardian PRODUCTS CORP.
COUPLING DIVISION
Dept. F-70, 1215 E. Second Street, Michigan City, Ind.

Wholesalers Association has Convention at New Orleans

THE SPRING CONVENTION of the Northamerican Heating and Airconditioning Wholesalers Association took place May 1 to 3 at New Orleans, La. Featured during the program were a series of workshop panel sessions, dealing with management and operating problems.

At the general membership meeting activities of the Association committees were reviewed. R. J. Woodward, coordinator of the Education Committee, reported that the organization has about 200 members in its dealer management schools. A school was completed April 29 at Community College, Denver.

A report on personnel testing was given by W. H. Slakey, chairman. The test has been used by many Association members, with general agreement that it represents a very substantial help in the selection of competent personnel.

Chairman Robert H. Swart spoke for the group insurance trust and reported sound and profitable operation. Participating companies have received an 8% dividend and Swart feels that another will be declared this year. Insurance now in force totals a little more than $1 million, with 98 participants representing 23 member companies.

Next meeting will be held November 27 to 30 at the Statler-Hilton, Detroit.

MOHI inaugurates Series of television Commercials

MODERN OIL HEAT INSTITUTE of Northern New York has inaugurated a series of television advertisements for oilheating. The schedule has been set up for a three month period, including a spot commercial between station breaks at prime evening time for every night of the week.

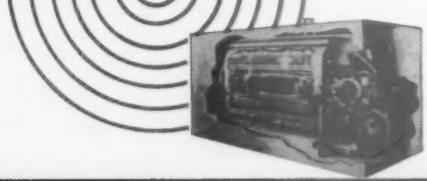
The theme is "With Little Bill you always get a little bill," tied in with the basic advantages of oilheating.

The group's advertising committee also is arranging for mats for dealer tie-ins in conjunction with their own advertising.

When it comes to Hot Water Heat,
You can't beat Bethlehem **DYNATHERM**

40% FUEL SAVINGS + ABUNDANT HOT WATER YEAR 'ROUND + AMAZING HEATING EFFICIENCY = SALES

THE EXCLUSIVE
"WHIRLING FLAME"
BURNS EVERY SINGLE DROP OF OIL—
PROVIDES GREATER HEAT THAN
BOILERS 3 TIMES ITS SIZE.

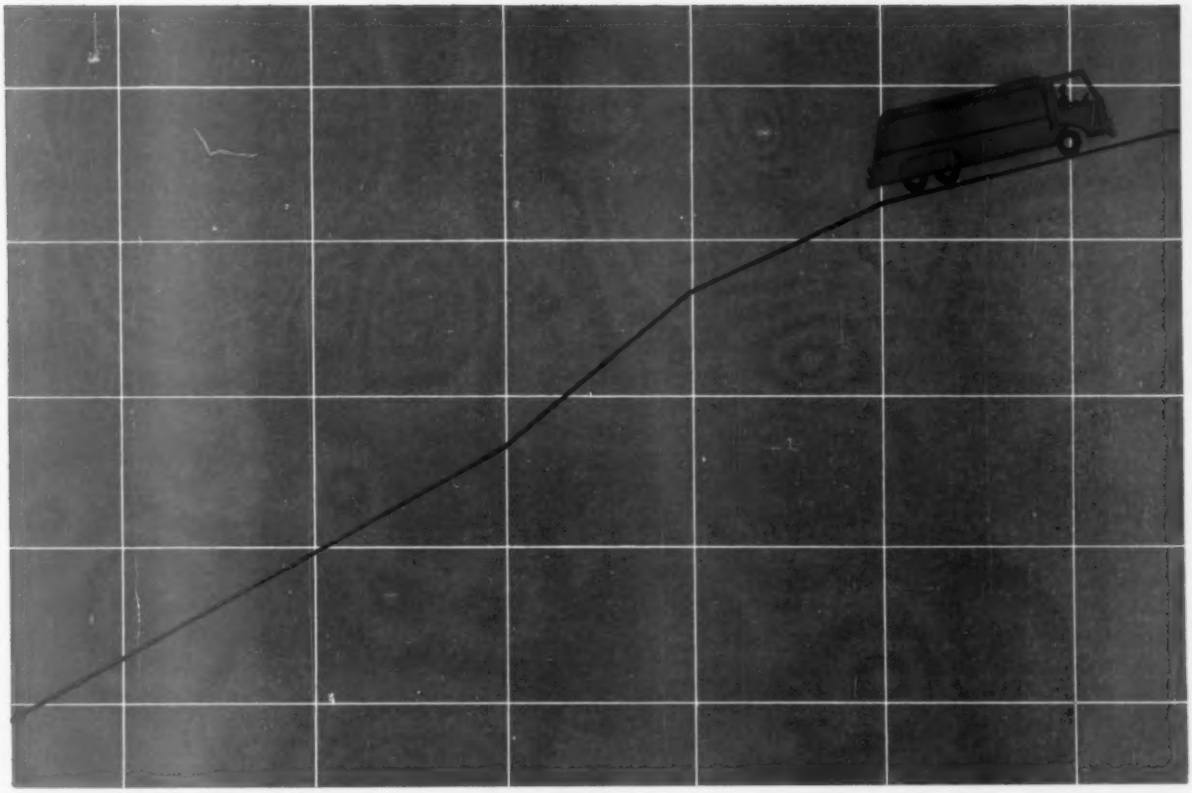


What benefits your customers adds up to profitable sales for you, and plenty of them. Here's what Bethlehem Dynatherm offers.

- It will actually pay for itself in 5 years, through fuel savings up to 40%. This is a fact that has been proved over and over again!
- Gallons and gallons of hot water . . . 24 hours a day . . . the year round!
- Tough, long-life steel construction for durability and fast heat response!
- A completely enclosed self-contained unit that occupies a minimum of space . . . It's downright attractive!

Guaranteed by a company with over 100 years experience in heat production and transfer.
BETHLEHEM FOUNDRY & MACHINE COMPANY · Bethlehem, Penna.

BUSINESS IS BETTER



WHEN YOU DO BUSINESS WITH COASTAL

"Does the Most for Fuel Oil Dealers"

COASTAL OIL COMPANY

EXECUTIVE OFFICES: 744 Broad Street, Newark 2, N. J.

OIL COASTAL COMPANY

Honeywell to almost double Size of Temperature Controls Plant

PRELIMINARY WORK has begun on a multi-million dollar, 227,000 square foot addition that will nearly double the size of Minneapolis-Honeywell Regulator Company's Temperature Controls plant in the Minneapolis suburb of Golden Valley.

Completion of construction in July 1961 will result in the transfer of about 1,200 production employees from two of the firm's other Minneapolis plants. The move will increase Golden Valley employment to more than 2,100. The addition will increase the building area to approximately 500,000 sq. ft.

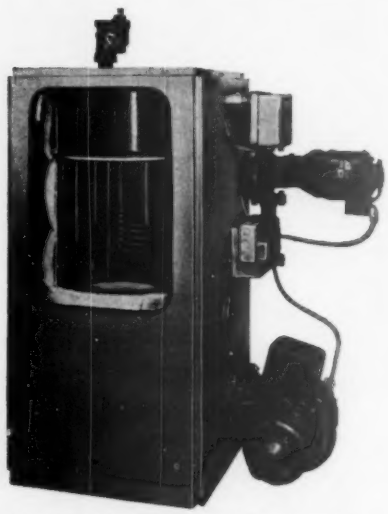
James H. Binger, Honeywell vice-president and head of its Temperature Controls Group, said the addition will permit the group to transfer all of its punch press and metal finish operations from the Main plant to Golden Valley and provide critically needed office space in the firm's home office building. A number of assembly operations also will be moved from a second plant in downtown Minneapolis.

When completed the Golden Valley facility will be the second largest plant in the entire organization, exceeded only by the 642,000 sq. ft. Main plant. Construction will get underway about August 1.

You'll be amazed!

V&E
SCHUYLKILL HAVEN, PA.

THERM-OVAL TUBE
PACKAGED BOILER UNIT



√ COMPETITIVELY PRICED

√ BUILT TO PERFORM

PACKAGE Includes:

Boiler, Built-in Combustion Chamber, 3 G.P.M. Coil, Jacket & Thermo-Altimeter, Burner, Nozzle, Primary Control, Thermostat, and 3-Way Aquastat Relay, Circulating Pump, Flo Control Valve, A.S.M.E. Relief Valve, and Draft Regulator.

ASME CONSTRUCTION AND ASME LABEL.
FLUSH AND EXTENDED JACKETS.

Packaged, Wired, and Assembled. Ready to Go!

Exceptionally High Quality, LOW PRICE. Write us — You'll be GLAD You Did!

V&E
SCHUYLKILL HAVEN, PA.

V. & E. PRODUCTS INC.
SCHUYLKILL HAVEN, PENNA.

Denver Fire Clay Co. to sell Babcock & Wilcox Refractories

A DEALER sales agreement has been signed by the Babcock & Wilcox Co., New York, with the Denver Fire Clay Co. The Denver firm will market B&W's refractory products in Colorado, Wyoming, New Mexico, Utah, Eastern Nevada, Idaho and Western Montana.

Denver Fire Clay maintains sales offices in Denver and Salt Lake City and has two plants and clay mines in the Denver area.

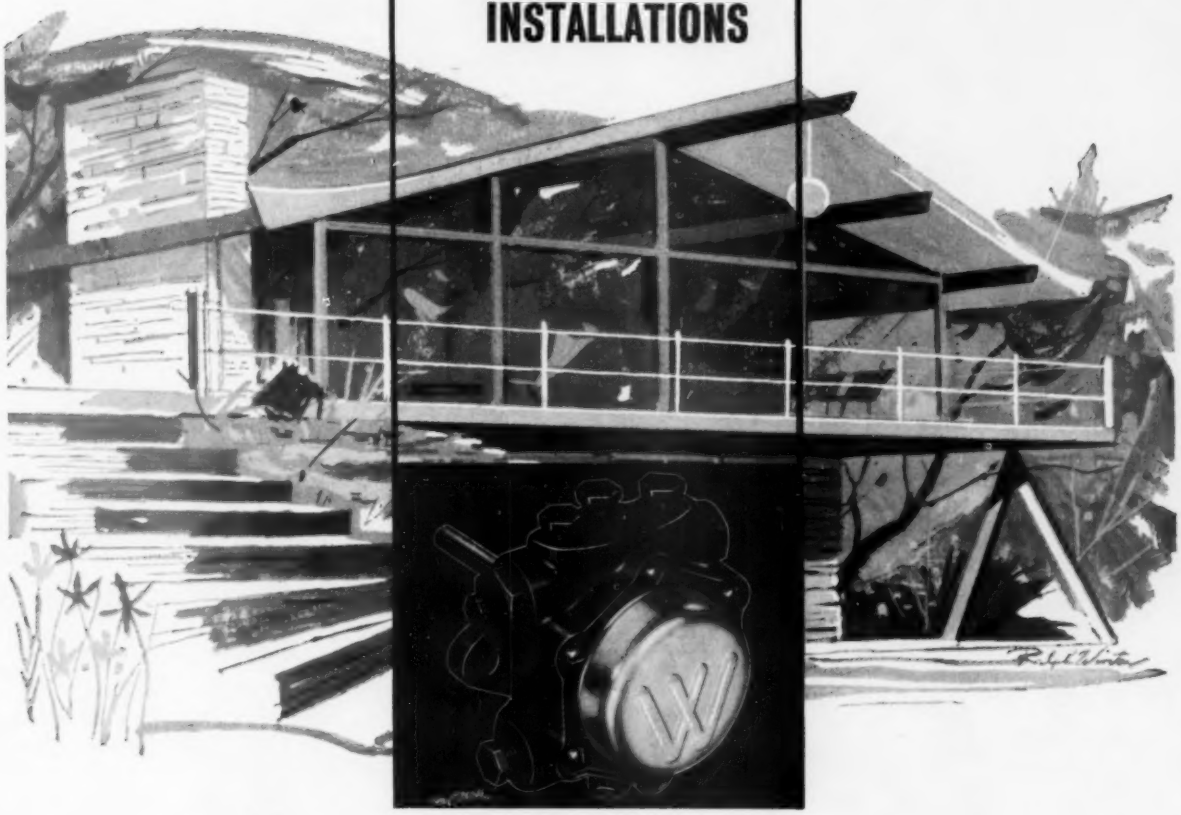
Russell Geisler, president, Skuttle Manufacturing Co., Milford, Mich., (left) and Ken Fournier, sales manager, recently marked the company's 25th anniversary as manufacturers of humidifiers and filters for warm air furnaces.

The firm's early beginnings go back to the early 1900's when John L. Skuttle, a Norwegian immigrant, came to this country. He is credited with the design of the first bonnet-type humidifier in the United States. Until 1935 he worked with other Michigan firms. In that year, he and four partners formed the J. L. Skuttle Co. in Detroit.

Both Geisler and Fournier have been associated with the company almost from the beginning. Geisler was the only employee hired in 1935, and Fournier joined the company in 1936.

The company continues as a leading producer of humidifiers and air filters. Its latest product is the Model 900 Cormaire, electric humidifier that has a complete humidification system incorporated within one compact unit.

YOU FIND THEM ON THE FINEST INSTALLATIONS



Webster ServiceSavers

Leading burner manufacturers and heating contractors specify Webster **ServiceSavers** on modern residential installations for the same reason they demand quality and assured performance in every component. And, **ServiceSavers** never let them down! Here's why:

There's a capacity and a type to fit every home plan. **ServiceSavers** are available in single and two-stage models — from 7 gph to 75 gph! With Webster's *exclusive* rotary filter, home owners are assured of uninterrupted heat — *all season long.* And never a call-back for servicemen. No cleaning problems!

ServiceSavers provide extra versatility — pressures up to 250 psi, speeds from from 1450 to 3450 rpm, faster prime, easier mounting, And, they replace any fuel unit now on the market.

Ask for Webster **ServiceSavers** *on your next burner order. Complete data, dimensions and ratings on the Webster line are available in Bulletin FU-2. Write today!*

HEATING DIVISION
WEBSTER ELECTRIC
RACINE · WIS

Harold P. Mueller, Jr., heads Mueller Climatrol

ON MAY 6 Harold P. Mueller, Sr., president and general manager, Mueller Climatrol Div., Worthington Corp., Milwaukee, Wis., turned these offices over to his son, Harold P. Mueller, Jr. Mueller, Sr., will continue with Worthington Corp. as a director and in the area of special executive contact assistance to overall corporate marketing.

H. P. Mueller, Jr., becomes the fourth generation to head Mueller Climatrol. L. J. Mueller, Sr., started the company in 1857 on Milwaukee's Reed Street. The first factory was a modest structure housing a combination hardware store and tin shop. Today, the Milwaukee plant alone has over 20 acres of plant under roof; Mueller also operates an integrated plant in Alhambra, Calif.

H. P. Mueller, Sr., joined the company in 1919, was named sales manager in 1924, vice-president and general sales manager in 1929 and president and treasurer in 1931. In 1954 when Worthington acquired the company, he became president and general manager of the Mueller Climatrol Division, and a director of Worthington.

Top: L. J. Mueller, Sr. and Jr.
Bottom: H. P. Mueller, Sr. and Jr.

H. P. Mueller, Jr., joined the company as an application engineer in 1948, became a sales representative in 1949, assistant sales manager in 1951, vice-president in 1954, vice-president in charge of sales in 1956 and executive vice-president in 1958.

New F. W. Dwyer Plant being built in Michigan City, Ind.

CONSTRUCTION has started on a new headquarters and plant in Michigan City, Ind., by F. W. Dwyer Manufacturing Co.

The new building is scheduled for completion by August 1 and will be approximately two and one half times larger than the company's present plant at Woodland and Greenwood in the same community.

Carlin Co. offers Handbook of Oilburners, water Heaters

AN AID to installers and service personnel is a 100-page, pocket-sized "Handbook of Oilburners and Water Heaters" offered by The Carlin Co., Wethersfield, Conn.

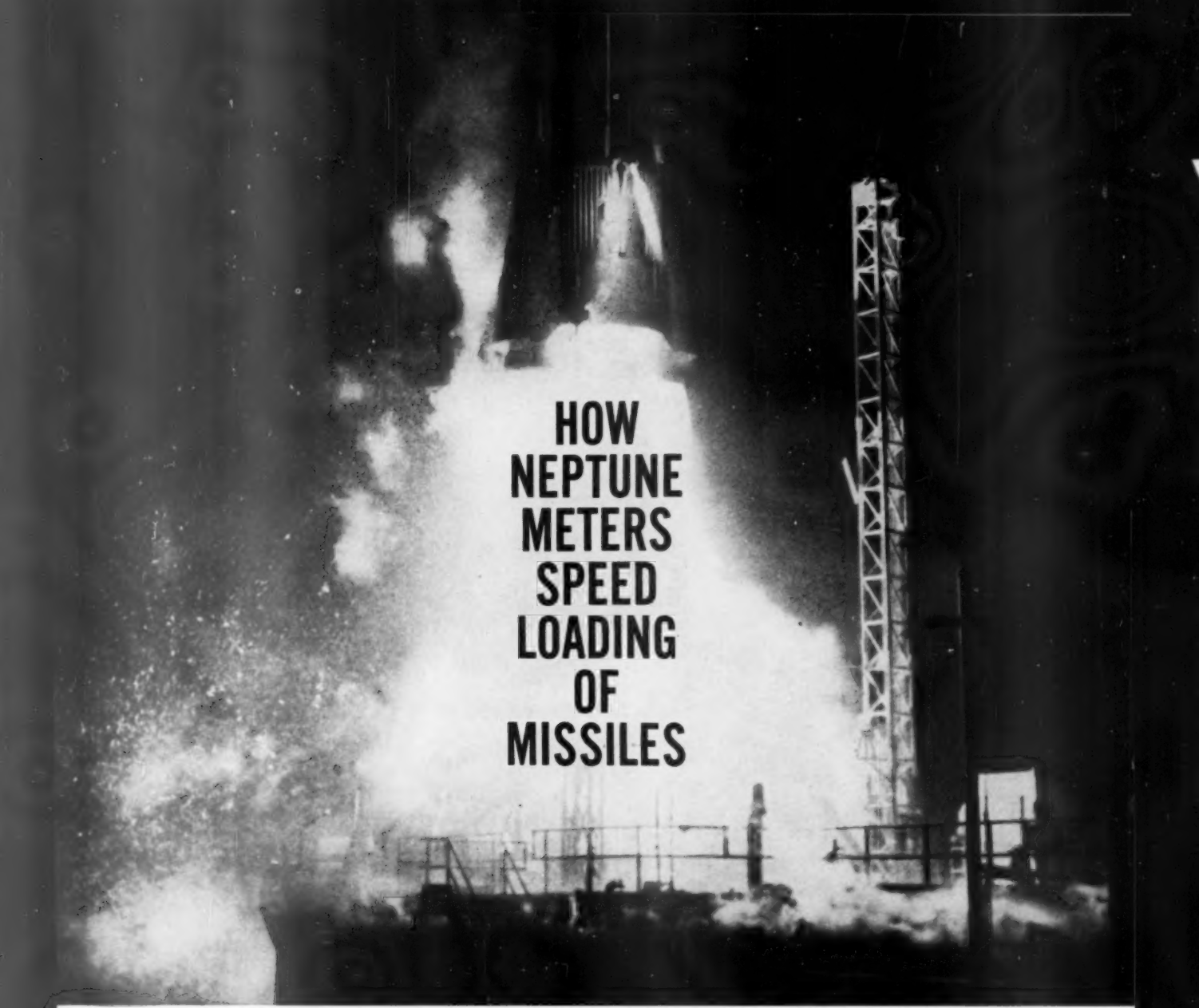
The book contains engineering and operating data on all models of U. S. Carlin equipment. Complete specifications and dimensions for all units is given.

HAGO PRODUCTS

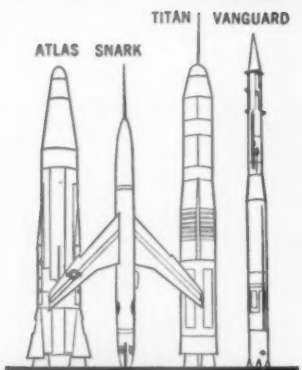
1120 GLOBE AVE., MOUNTAINSIDE, N. J.

IN CANADA — RICHARDSON, LTD.

1169 Caledonia Road, Toronto



HOW NEPTUNE METERS SPEED LOADING OF MISSILES



neptune
for a better measure of profit

In the tense moments before blast-off, when the "bird" is being fueled, a Neptune Meter is at work. As liquid fills the missile's tanks, the meter smoothly ticks off every pound. If required, it can shut off the flow at the exact preselected quantity; it can even turn off the pump and light a "ready" lamp.

For fueling-up and other purposes, four missiles . . . Atlas, Snark, Titan, and Vanguard . . . count on Neptune meters for ground support. *Simplicity, accuracy,* and *proved reliability* are the reasons.

The basic meter is exactly the same as those you use on your trucks and bulk plants. These same meters are widely used for metering jet fuels. Because Neptune engineers have been working on ideas for your future, we were able to help solve special metering problems, such as temperature compensation, required for missiles.

Past, present, and future, Neptune is the meter . . . and the meter *company* . . . you can rely on.

NEPTUNE METER COMPANY
47-25 34th St., Long Island City 1, N. Y.
Branches and Jobbers in All Principal Cities
In Canada: Neptune Meters, Ltd., Toronto, Ontario

LIQUID METER DIVISION

Shenango REFRACTORIES
BALTRANITE Combustion Chambers

1. THIN WALLED CERAMIC
2. HIGH STRENGTH REFRACTORY
3. HEAT SHOCK RESISTANT
4. LIGHT WEIGHT DESIGN
5. COMPLEX SHAPES EASY

SEND INQUIRIES TO -- BOX 120, NEW CASTLE, PENNSYLVANIA

American Oil Co. marks its Golden Anniversary

FIFTY YEARS ago, the late Louis Blaustein and his son, Jacob, formed the American Oil Co. in Baltimore. The company started with three employees, a horse named "Prince," and a 270 gal. tank wagon for the delivery of kerosene.

Today, the company has more than 7,000 employees, five refineries, 15 ocean terminals and a marketing organization that covers 28 states. Jacob Blaustein is now a director of Standard Oil Co. (Ind.), parent company of American Oil.

Paragon give incentive Awards to Nassau high school Juniors

AN OUTSTANDING member of the junior class in every high school in Nassau County, New York, will be given an incentive award by Paragon Oil Co., Long Island City, N. Y.

Some 60 public, denominational and private high schools participate in the program. The Paragon awards, being made for the third consecutive year, are accompanied by a $50 U. S. Savings Bond. Students are selected for the award on the basis of their scholastic record.

The Honorable A. Holly Patterson, county executive, will present the awards on October 14 at the Mineola Fair and Science and Industry Exposition.

Catalog on hydronic Units issued by Bell & Gossett

BELL & GOSSETT CO., Morton Grove, Ill., has published a new catalog illustrating its line of water heaters, coolers, pumps, valves, control units and other component products for heating and cooling homes.

Key models in each of the product categories are pictured and diagrammed. Technical data explains functions performed.

Promotions at Sid Harvey announced at Dinner-dance

RICHARD KENNETT has been elected vice-president of Sid Harvey of Conn., Inc., Joseph Knob is now vice-president of Sid Harvey of Pa., Inc., and Gerald Burchell is purchasing agent for Sid Harvey, Inc. These promotions were announced by Steve Harvey, president, at a dinner-dance honoring company old timers.

Twelve members were added to the old timer group, composed of employees with ten or more years of service. The initiates were: Lillian Arevalo, Reese Bailey, Bruce Colepaugh, Thomas Dauch, Ralph Jaques, James McNally, Casper Schrouder, Gerald Skakal, Howard Snow, William Snyder, John Stein and Michael Toto.

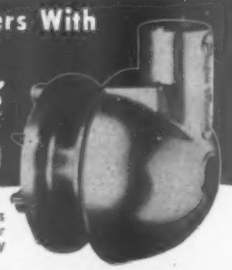
EVECO ADJUST-O-DRAFT
DRAFT CONTROL

Fully adjustable for precise accurate setting and instant response to draft variations. ADJUST-O-DRAFT is quality constructed. A cast aluminum ring with built in stops, concealed solid brass bearings, and other features, insure lasting dependability and maximum efficiency when you INSTALL ADJUST-O-DRAFT.

Available in sizes from 5 thru 12 inches.

MUTUAL MANUFACTURING CO.
45-18—162nd St., Flushing, L.I., N.Y.

Satisfied Customers With Palm Beach WARM AIR MODULATION



Eliminates nuisance service calls — gives your customer highest quality warm air heating performance by automatically regulating blower speeds.

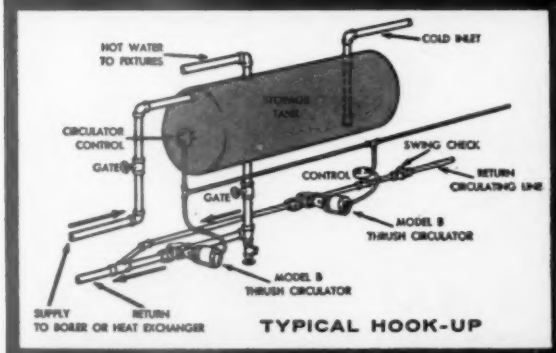
● CONSTANT CIRCULATION ● EVEN TEMPERATURES
● STOPS DRAFTS ● SERVICE FREE ● ELIMINATES NOISE

NATIONAL MODULATION COMPANY
2726 NORTH HIGHWAY 61, SAINT PAUL 9, MINNESOTA

Announcing the NEW

THRUSH BRONZE CIRCULATOR

for fresh water use...



TYPICAL HOOK-UP

Here's the newest member of the Thrush family of highly efficient Water Circulators . . . with bronze housing and all parts in contact with water, non-corrosive. Detail at left shows domestic water application.

To be sure of long trouble-free service and complete customer satisfaction, install Thrush Circulators. They have proved themselves dependable for over thirty years. See your wholesaler today or write Dept. C-7.

Quality Hydronic Heating Specialties

H.A. THRUSH & COMPANY
PERU, INDIANA

THRUSH

Mrs. Mary R. Piccoli has the first tankful of a year's free supply of fueloil delivered by Sun's local distributor, Sunheat of Philadelphia, Inc. She won the fuel at the recent Philadelphia Home Show. George Lignelli supervised the first fill.

Perfection adds sales Managers in airconditioning Department

APPOINTMENT of W. H. Westenhoefer, James C. Hackley and Alvin J. Schnur as district sales managers for airconditioning and furnace products has been announced by the Perfection Division, Hupp Corp., Cleveland. Districts covered by the new managers are Pennsylvania-New Jersey, Texas-Oklahoma-Louisiana, Missouri-Kansas-Iowa-Nebraska, respectively.

New district sales managers for space heater and appliance products are Robert T. Watt, Florida-Georgia-Alabama, and James C. Carlton, Michigan - Ohio - Western Pennsylvania.

Welbilt buys American Coils; sets up marketing Subsidiary

WELBILT Air Conditioning and Heating Corp., a newly created subsidiary of Welbilt Corp., Farmingdale, N. J., is creating a coast-to-coast network of geographically protected franchised dealers.

The new firm was formed following the recent acquisition of American Coils Co. and will manufacture a complete line of airconditioning and heating units and components for both residential and commercial applications.

Peter Dalton, former product sales manager, airconditioning division, Worthington Corp., has been appointed vice-president in charge of sales.

In the New York and Westchester area, Milton Levine has been named district sales manager.

Factory airconditioning School is held by Armstrong Furnace

DEALERS from ten states attended the first of two factory airconditioning schools held in Columbus, Ohio, by the Armstrong Furnace Co.

The school was designed to aid the beginner as well as the experienced installer of airconditioning equipment. Among the topics covered were the refrigeration cycle, wiring, troube-shooting and installation tips.

The company recently announced that Bert L. Leslie has been appointed district manager to cover Ohio (except Cincinnati and the Northwest corner), Western Pennsylvania, Northwestern Maryland and West Virginia.

BOSTON-APTHORP OIL BURNER NOZZLES

Everything You Expect of a Nozzle!

1. Complete and perfect atomization.
2. Individually tested, BOSTON-APTHORP Nozzles deliver the correct gallonage, angle and type of spray, as marked.
3. Nozzle tip made of one-piece stainless steel, resulting in: (a) Uniform expansion and contraction. (b) Less heat conducted to the inside of nozzle than with brass, thus eliminating varnish build-up on inside vital parts. (c) Long life because stainless steel is tougher.
4. Fractional gallon sizes furnished standard with porous bronze filter.
5. Available in hollow and solid spray and standard angles of spray 30°, 45°, 60°, 70°, 80°, and 90°.

HOLLOW SPRAY

The hollow spray nozzle is designed for burners delivering a hollow air pattern. All of the atomized spray is delivered to the outside of the cone of spray.

SOLID SPRAY

The solid spray nozzle is designed for burners delivering a solid air pattern. The atomized oil is delivered equally throughout the entire cone of spray.

For details, write to:

BOSTON MACHINE WORKS COMPANY

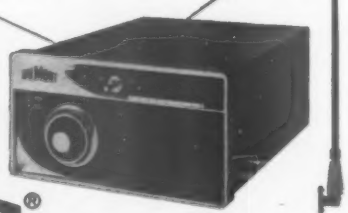
Oil Heating Supplies Div.
7-17 WILLOW STREET
LYNN, MASSACHUSETTS

Shortest route to
BIGGER PROFITS!

Time saved enroute means money in your pocket! Save time normally used on unnecessary backtracking and duplicate runs — use Du Mont 2-Way Radio. With 2-Way Radio you can have continuous contact between driver and headquarters for rerouting instructions, pick-ups, extra deliveries, etc. 2-Way Radio is the nearest thing to having your office phone in every truck — its so convenient, economical and useful.

Write for details

2-WAY RADIO by DU MONT®



Mobile Communications Division
Allen B. Du Mont Laboratories, Inc. 750 Bloomfield Avenue, Clifton, N. J.

WILL YOU SPEND 18 MINUTES

TO LEARN (FROM THE EXPERIENCE OF OTHER DEALERS)

HOW YOU CAN BREAK THROUGH THE PAPER-WORK BARRIER TO GREATER PROFITS ?

You're invited to view "Break-Through for Profit," an 18-minute sound slidefilm (color) in which successful fuel-oil dealers tell how they got out from under mounting paperwork costs through accounting mechanization.

You'll get facts without frills as these men discuss your kind of problems in your kind of language. And you'll discover how accounting mechanization can speed you toward important time-and-cost savings in such areas as billing, credit control and degree-day delivery scheduling.

Interested?

Just send in the coupon below. Or, simply phone our nearby branch office. Burroughs Corporation, Detroit 32, Mich.

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"NEW DIMENSIONS / in electronics and data processing systems"

Burroughs Corporation
Detroit 32, Michigan

Gentlemen:

I am interested in viewing the film "Break-Through for Profit." Please have one of your representatives make the necessary arrangements so that I can see it at a time and place convenient for me.

Name_____

Firm_____

Address_____

City_____ Zone_____ State_____

Lennox Industries expanding Plant in Marshalltown, Ia.

CONSTRUCTION on a 50,000 sq. ft. addition to the Marshalltown, Ia., plant has been started by Lennox Industries, Inc.

The building project includes three new buildings and extensive remodeling of existing structures. Target date for completion of the half-million dollar project is early 1960.

Other Lennox plants are located in Columbus, O.; Syracuse, N. Y.; Fort Worth, Tex.; Decatur, Ga.; Salt Lake City; Los Angeles; Des Moines, Ia.; Toronto and Calgary, Canada.

STEP UP DELIVERY
WITH VIKING TRUCK MOUNTED PUMPS
. . . and you can do it without speed increasers. Connect your Viking truck pump directly to transmission through power take-off. Yes, specify Viking pumps for all around top service on all truck sizes up through big transports. Vikings are long lasting, too. Many outwear the trucks on which they are mounted. Profit from others' experience and specify Vikings. 35-50-90-150-200-300 GPM SIZES
VIKING PUMPS ALSO GIVE YOU:
Revolvable casing for handy port locations. 8 positions ● Integral thrust bearing of sturdy construction. Adjustable for extended pump life ● Either extra long packing box or mechanical seal for non-leak operation ● Safety valve on pump head ● Large mechanical seal type pumps equipped with aluminum brackets for lighter weight.
For complete information on Viking Truck Pumps and other petroleum handling pumps, write for new catalog GEE
VIKING PUMP COMPANY
Cedar Falls, Iowa, U.S.A. In Canada It's "ROTO-KING" Pumps
Offices and Distributors In Principal Cities, See Your Classified Telephone Directory.

Lewis Oil Co., Port Washington and Kings Park, New York, has launched an expanded advertising program to hold the Long Island market for fuelоil. Space has been placed in the Long Island Press and about 20 other newspapers covering smaller towns. This is supplemented by 26 weeks of radio coverage.

Harvey W. Lewis, president, pointed out that several studies by independent engineers have proved oil to be up to 38% cheaper than gas in Nassau and Suffolk counties. "But the long-term stakes are high, and the gas utility has not hesitated to employ questionable tactics. It has blatantly stated, against all the facts, that gas is cheaper . . . and has employed a flood of advertising to try to convince the public of this. Our present ad program has proved to be quite effective in combating this line of misrepresentation, backing the heavy guns of a similar campaign directed to the same target by the Oil Heat Institute of Long Island."

PRINTED FORMS AND OPERATION AIDS
For Immediate Shipment
Check items you are interested in. Attach to your letterhead, mail for information, prices, FREE SAMPLES:
☐ Degree Day Cards
☐ Service Order
☐ Service Ticket
☐ Service Record Card
☐ Daily Record of Deliveries
☐ Service Dept. Record
☐ Authorized Receipt
☐ Door Knob Notice Card *
☐ Telephone Call
☐ Inter-Office Correspondence
☐ EZE Stick Pressure Sensitive Label *
☐ Price Charts
☐ Weather Temp. Recording Thermometer
☐ Safety Sidewalk Caution Signs
☐ Sort-O-Matic Rack
☐ METERED ONE-TIME CARBON DELIVERY TICKETS (Truck—Bulk Plant—Gas Pump)
My Name.....
Company.....
Street.....
City.....State.....
*Allow 2 weeks to imprint your copy.
Serving 20,000 Petroleum Firms Over 30 Yrs
DEGREE DAY SYSTEMS
39-30F 58 ST., WOODSIDE 77, N. Y.

Superior Filtering for all Oil Burning Equipment!
Klemm MICRO FUEL OIL FILTERS
FF-430 U/L
FF-430G
PK-150 U/L
JR-60
There's a Klemm Fuel Filter for every standard burner using No. 1 and 2 fuel oil. Your choice . . . metal or glass bowl. "Millions Since 1932."
1. Practically no flow resistance—true depth filtration.
2. Simplified construction for simplified service . . . no tools required.
3. Eliminates nozzle and line clogging for increased burner efficiency.
4. All parts . . . Hi-Chrome and Brushed Zinc.
chemistone
Controlled porosity element assures sparkling, crystal-clean fuel oil every minute. Traps water . . . removes dust, rust and scale.
Klemm PRODUCTS
Division of
KLEMM AUTOMOTIVE PRODUCTS COMPANY
1722 North Damen Avenue • Chicago 47, Illinois
EXPORT: Guttermon Co., Inc., New York 4
CANADA: Elgee, Ltd., Toronto

only this much more

buys this much difference

The little extra you pay for Purolator filters buys features and performance you just don't get in ordinary filters. The picture shows you the difference; here's what this difference means to you:

❶ Nozzles last longer because the Purolator Micronic element filters out abrasive particles as small as 0.0005 of an inch. A waste-type filter medium, no matter how much it's compressed, simply can't filter that fine, even when it's new.

❷ Filters last longer (a year or more without servicing) because every Purolator filter has over 200 square inches of filtering surface, enough to filter over 7,000 gallons of fuel oil without replacement.

❸ No channeling or unloading, ever, because the Micronic element is precision made from a single pleated sheet of resin impregnated cellulose that resists water and acid, won't shrink, stretch, distort, flake or deteriorate.

❹ No spillage, no air leaks. The depressed head on the Purolator housing eliminates spillage when servicing. The recessed gasket seal makes an airtight fitting between case and head.

And because Purolator filters filter better, longer, you make fewer trips, have fewer problems fulfilling your service contract. For full information, write to Dept. 2577.

Filtration For Every Known Fluid

PUROLATOR PRODUCTS, INC.

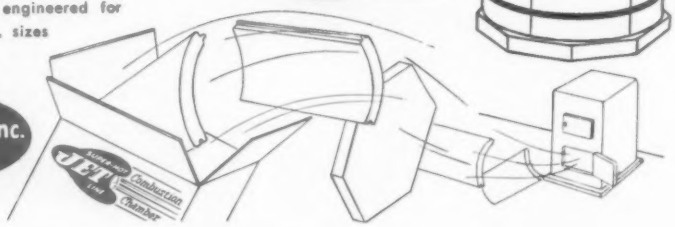
RAHWAY, NEW JERSEY AND TORONTO, ONTARIO, CANADA

FASTEST CHAMBER

FROM CARTON TO FIRING

So fast . . . so easy to install because there's fewer pieces. One package gives you everything you need including pre-cast self-leveling base or hearth. Designed with maximum combustion area . . . engineered for more complete fuel combustion—Immediate delivery . . . sizes 6/10 to 12 gallons per hour. Write for latest bulletin.

SUPER-HOT JET LINE Combustion Chamber



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ASBESTOS and INSULATING MATERIALS

141 West Jackson Boulevard • Chicago 4, Illinois
SOLD ONLY THROUGH BETTER JOBBERS EVERYWHERE!

Bulletin on Control Valves issued by Ralph N. Brodie

A BROCHURE designed for easy specification of control valve types for particular product and application problems has been published by Ralph N. Brodie Co., San Leandro, Calif.

It covers the company's Series 500 valves and contains photos, functional data, description, explanation of operation, color coded flow diagrams, specifications and information required for specifying.

General Controls produces thermostat display Package

DOUBLING as a shipping container and counter display is a new multi-color carton for Thermoramic indoor-outdoor temperature control system made by General Controls Co., Glendale, Calif.

The top of the package folds into an arched backdrop for display.

The Thermoramic system senses outdoor air temperature and regulates indoor temperature accordingly.

A giant three-color flashing electric sign, visible more than a mile away, has been installed by The Williamson Co., Cincinnati, O., over its Oakley plant. The sign is 50 feet wide and 12 feet tall, located 60 feet in the air.

MAID-O'-MIST'S quick hook-up SADDLE VALVE No. 8

Fits ½" or ¾" iron, brass or copper water pipe. Drill ¼" hole in pipe, clamp on valve. Outlet for ¼" O.D. copper tubing.

NEEDLE VALVE

No. 816: controls water supply to humidifiers and water valves. Brass: ⅛" I.P. male end; ¼" O.D. copper tube size outlet.

WRITE FOR CATALOG

MAID-O'-MIST, Inc.
3317 NORTH PULASKI ROAD, CHICAGO 41, ILLINOIS
MAID-O-MIST Inc. HEATING SPECIALTIES

Servicing Oil Burners ?
YOU NEED THIS
FREE Catalog
CONTENTS
Hydrovalve
CATALOG #60
handy 20 page Catalog chock-full of popular REPLACEMENT PARTS and SERVICE TOOLS to make your servicing easier.
• FUEL UNIT PARTS • CONTROL PARTS
• CIRCULATOR PARTS • SHAFT SEALS
• STRAINERS • GASKETS
• IGNITION TERMINALS
Your friendly Oil Burner Jobber stocks the HYDROVALVE Line.
Ask him for a copy of Catalog #60, or write direct.
Hydrovalve CO., INC.
1319 Utica Avenue, Brooklyn 3, N. Y. / BUckminster 4-1330

NEED RELIABLE, UP-TO-DATE TECHNICAL DATA?

Published by the American Society of Heating, Refrigerating and Air-Conditioning Engineers

THE

NEW REVISED

HEATING VENTILATING AIR-CONDITIONING GUIDE—1960

IS YOUR ANSWER

- **38th Year of Service to the Profession**
- **Accurate, Easy-to-Read Diagrams and Tables**
- **Complete Indexing of Text and Advertising**
- **57 Chapters—792 Pages: Revised, Reorganized, Rewritten**
- **Used by Engineers, Contractors, Architects, Educators**

The GUIDE 1960 is your most complete source of all the latest important technical information, current practices, and product developments in air conditioning, heating, ventilating . . . the basic reference book of the profession . . . prepared by experts . . . a valuable addition to every company reference library.

The outstanding improvements in this edition include (1) a rewritten chapter on thermodynamics, (2) extensive revision in sound control chapter, (3) new data on restaurant hot water requirements and method of sizing equipment, (4) a new section dealing with fundamentals, detection and elimination of odors, (5) extension of winter design temperatures to Alaskan cities, (6) new data on equivalent duct lengths for sheet metal fittings, (7) additional information on pipe and tube heat gain and loss, (8) a new chart and table for selection of chimney sizes for automatically fired boilers, (9) revised data on water treatment, (10) maximum allowable concentration of air contaminants adjusted to values adopted by the ACGIH in 1959, (11) new illustrations of automatic control arrangements for air-conditioning systems, (12) a rewritten chapter on residential air conditioning, (13) revised rating data for steel boilers, packaged units, and furnaces, (14) new data on operating controls for oil burners, and (15) a new table of gas piping flow capacities.

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Rotary Atomizing Burners
¾ to 12 Gph
Boiler-Burner Units
400 to 730 Sq. Ft. EDR Steam
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NEW! RECTORSEAL #5
Thread and Gasket Sealing Compound
Slow dry — soft set.
Dopes more joints per dollar . . . prevents leaks at all pressures. Won't settle, harden, dry out or skin over in the open can. Write for Sample.
(If fast dry—soft set compound is desired use Rectorseal #2)

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THE POSITIVE LEAK PREVENTER

FIRE BOX

fueloil & oil heat

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Advertisements are payable in advance 75c a line; minimum charge of $4.50 for 6 lines or less.

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NOTICE — Those writing to Box Numbers, address: c/o FUELOIL & OIL HEAT, 2 West 45th St., New York 36.

TURN YOUR SURPLUS INVENTORY of stoker, oil burner or gas controls into cash. Mail list and price to Box 885.

SALES EXECUTIVE and/or Salesman, available in the Washington, Baltimore, Delaware area. Can handle field men; sell to jobbers and work with them; and also to retailers. Has good record—knows all forms of heating and firing. Will make you a very happy employer, if you get him for a field man, zone manager, or salesman. Excellent references. Box No. 1465.

SERVICE MANAGER with 20 years experience in installation and service of light and heavy oil, desires to relocate in the South. Would prefer Northern Florida. Employed at present with large retail company. Can furnish excellent references. Reply Box No. 1518.

DECALS—Service, nameplate or truck lettering and trademark decals made to your order. Easy to apply, uniform, distinctive, economical for small or large needs. Write for catalog. Mathews Co., 827 S. Harvey, Oak Park, Ill.

REPRESENTATIVES: A complete line of heating equipment Oil, Coal and Gas fired furances and Boilers also Baseboard Radiation—High Commissions to experienced Rep's selling to the Dealer-Contractor. Write your Qualifications—Territories desired and lines now selling: Box No. 1512.

DOES YOUR DELIVERY SYSTEM ALWAYS PERMIT MAXIMUM FILL? The Hidy Degree-Day Recorder provides a constant K-Factor for every customer. Assures accuracy in your degree-day system—even in highly variable spring and fall weather. Accurate to your locality. Reads and interprets every measurable factor affecting degree-day count. Cuts trucking and bookkeeping costs up to 30%. Makes it really possible to schedule deliveries. Your degree day system needs Hidy Degree-Day Recorder. Write for free details in booklet July CBJL today. Please tell us if you are now using a degree day system. The Hidy-Brown Recorder Co., 6988 Five Mile Road, Cincinnati 30, Ohio.

MANUFACTURERS REPRESENTATIVES DESIRED: Major manufacturer of Electric Fuel Oil Preheating equipment requires representation in the San Francisco, Cleveland and Detroit areas. Desire organizations qualified and calling on commercial-industrial boiler and burner manufacturers. Also require representation to O.E.M.'s and large users of heavy-duty electric tubular heating elements for all types of industrial applications. Reply Box No. 1521.

Eastern Pennsylvania, Southern New Jersey, Maryland and Delaware territories available, with three man organization. Need a few good specialty items. Also have warehouse available in Philadelphia for distribution. Box 1522.

RETAIL HEATING SALESMAN. Excellent future for qualified aggressive heating salesman. A complete advertising program to furnish an adequate source of leads. Associate yourself with a progressive fast growing fuel oil and Heating Firm. All replies held strictly confidential. Write for particulars. C. Y. Woodbury, inc., 46 Franklin St., Quincy, Mass.

Fuel oil, Heating & Air Conditioning Business for Sale, will sell or lease property. Located in Northern Virginia with plenty potential. One 55 and one 59 Chevrolet fuel oil trucks, five other trucks. 500,000 gal. oil volume, total sales volume $225,000.00, established 15 yrs. In prosperous and fast growing area, good money maker, selling on account of health. Reply Box No. 1523.

REPAIR THAT LEAKY FUEL OIL TANK with the new miracle fiberglas plastic Tank Bond. Apply to the outside of the tank. Put a new bottom in an old leaky tank and make it just as good as new! One can is enough to cover the bottom of a vertical 275 gal. tank. $4.05 per can or $45.00 per case of 12 cans. Order from Tank Bond, 400 F St. N.E., Washington 2, D. C.

AVAILABLE—A simplified Degree-Day system. Nothing to multiply or to add. No need to concern yourself with weather recordings. You get precalculated charts for your delivery area which visually show exact date when customer's tank down to re-fill level. Year-round non-heat fuel use (hot water) also precalculated. Above charts, printed instructions, 5 x 8 record cards and supplies for 500 accounts only $15.95—Postpaid if check with first order. Satisfaction guaranteed or money refunded. Rated dealers net 10 days. Charles Baasch, P. O. Box 14, Floral Park, N. Y.

THE FUEL CONDITIONERS for all type fuels. Mr. P. L. Gillard, Plant Foreman states, "We do not have any noticeable flyash or sulphuric fumes since we have been using Induco, which is about 5 years now and I am well pleased with its performance. I have been an engineer for 15 years and I have tried about every additive on the market and I like Induco the best." Note: Mfg. Reps. & Dealers wanted. Members of LAC of C. & C.T.A. Some Exc. Terr. Industrial Chemical Co., Est. 1893, 12134 S. Main St., Los Angeles 61, Calif.

WANTED MANUFACTURERS REPRESENTATIVES for fast selling national advertised heating accessories, territory of Michigan, Western and Southern States. Reply Box No. 1524.

EXCLUSIVE RIGHTS AVAILABLE for unique "News Item" advertising. Few inches get more results than quarter pages. If you would like to do consistent small space newsy advertising that is different, effective and inexpensive in your newspaper, get details without obligation from Edward Fiske Advertising, 2 Depot Plaza, White Plains, New York.

SERVICE AND OPERATIONS COORDINATOR—can revamp present organization to cut costs and improve efficiency or set-up and run entire sales and service operation—including training program, customer and labor relations, dispatch, inventory control, advertising, etc. Will guarantee to produce more profits—less problems. Brochure on request. Burton H. Mason, 33 Pine St., Trumbull, Conn.

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ADJUSTABLE AND QUIET

Ventilated Plates
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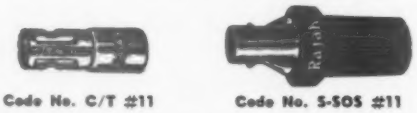

Code No. C/T #11 Code No. S-SOS #11
THE RAJAH CO., 35 Verona Ave., Newark, N. J.

TYPE

CQ

Series

POINTS THE WAY TO BETTER BOILER PRESSURE CONTROL!

Positive pressure control of both thermal expansion and emergency generated steam provides maximum safety. Automatic feed keeps system at correct pressure. "CQ" is offered in ten different models, all easy to install and offering a minimum of service problems.

Dual Controls
Combination Relief and Reducing Valves for hot water space heating (hydronic) boilers.

There's a PLUS in Cash-Acme Dual Controls
- • • Bronze bodies, inbuilt check
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FINENESS AND CAPACITY COMBINED IN COMPACT SIZE!

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MICROSTONE® ELEMENT
FILTERS

MODEL MS-3 — Handles 100,000 BTU's, installed at tank or anywhere on line for medium to large oil burning units: much greater than other filters of similar size! Exclusive Microstone ceramic element traps all foreign matter to 1/10,000th of an inch — easily cleaned for re-use. All aluminum construction; easily disassembled without special tools; built-in shut-off valve and air vent; inlet and outlet ⅜" IPT. And the cost is low! _____ $4.80 EACH

MODEL MS-3E — Even lower initial cost! Same basic construction as Model MS-3, but without shut-off valve and air vent! A real low-cost attraction! _____ $4.00 EACH

SEE YOUR JOBBER — OR ORDER DIRECT! If he cannot supply you we ship postpaid anywhere in U.S.; normal discount in dozen lots.

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"FACTORY REBUILT" Repair Exchange control service on all popular makes at regular manufacturers list prices and trade discounts.

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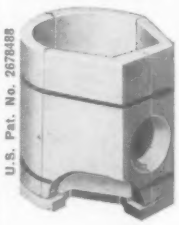

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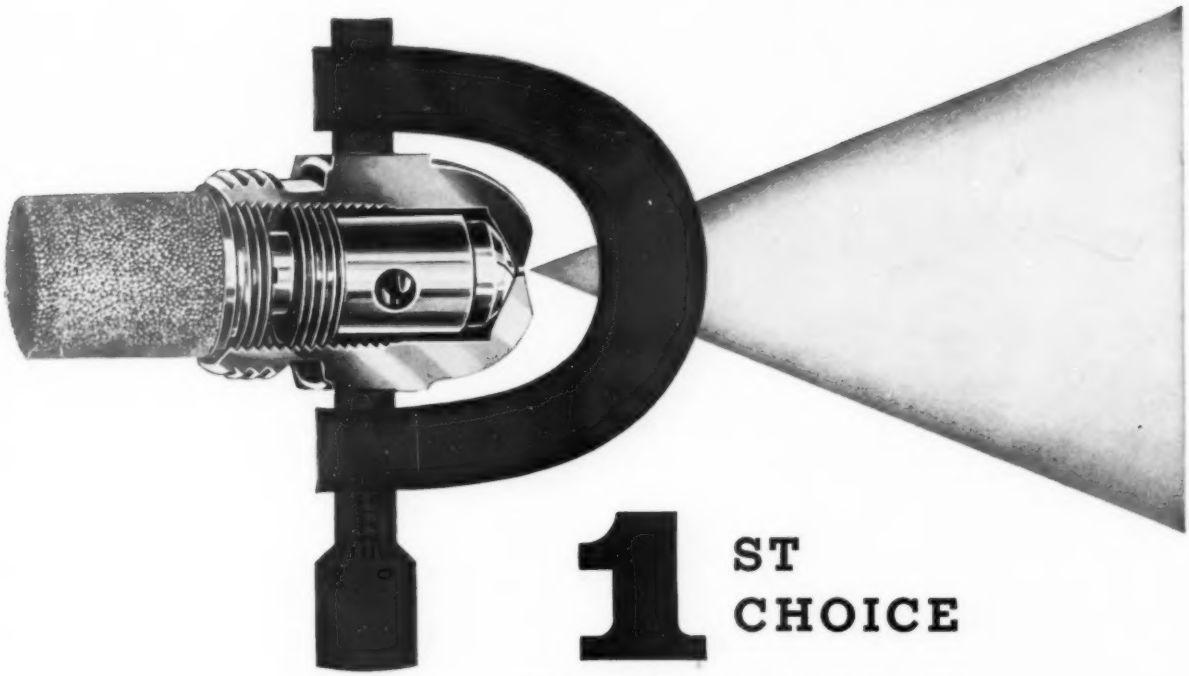

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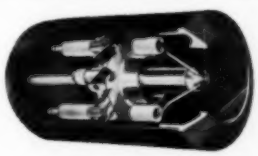
ALWAYS INSIST ON MONARCH PRECISION NOZZLES!



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G-81-C Head is as easy to install as an ordinary Air Cone and Stabilizer. Produces high CO_2 with no "adjustments" to get out of order. For 3⅞" or 4" I. D. Air Tubes.

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REMEMBER: It costs more to clean a nozzle than to replace with a new, precision, guaranteed-uniform Monarch Nozzle.

Out of water; out of business!

That goes for boilers too—both steam boilers and hot water boilers. Everyone in the heating business knows this, but our problem and your problem is to make the boiler owner *equally* conscious of it.

It's a job that's far from completed. There's still a lot of work to be done in the places where "out of water" literally means "out of business"—places like

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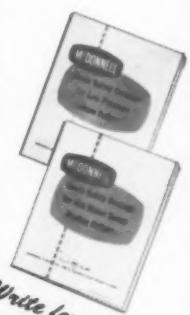
Motels	Dry Cleaners	Schools
Apartments	Filling Stations	Stores
Greenhouses	Office Buildings	Churches
Theatres	Bottling Plants	Garages

Boiler owners and operators know how important it is to keep boilers, tanks and heaters operating. But they may not realize how important a role the right boiler controls can play in bringing this about.

To help you explain the what-why-how of Basic Safety Controls we have compiled these two companion booklets—one on steam controls and one on hot water controls. They are complete, but simple; contain all the reasons, all the conditions, in A-B-C form that anyone can understand.

Why not put them to work for you. Just write and ask for the "Basic Safety Control booklets."



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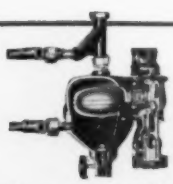

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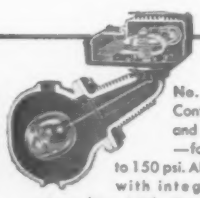

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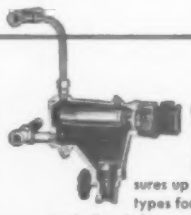

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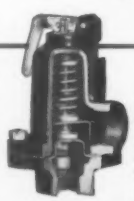

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